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ABSTRACT

Within the educational reform debate, there is general agreement that the development of high academic standards is an important first step toward improving academic outcomes. This report highlights the standards initiatives being implemented in Colorado, Delaware, Minnesota, and South Carolina. All four states have made substantial progress in and embraced different approaches to developing high-level content standards. The states provide examples of lessons learned, obstacles encountered, strategies formulated, and insights gained during the development and implementation of rigorous academic standards. Although each state adopted processes unique to its educational and political contexts, the elements of leadership, public engagement, and phased development were the key to each state's activities. Eleven figures are included. (LMI)

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Setting Educational Standards

Experiences in Four States

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Setting Educational Standards

Experiences in Four States

by Mary Houghton

Since their initial meeting in 1908 to discuss interstate water problems, the Governors have worked through the National Governors' Association to deal collectively with issues of public policy and governance. The association's ongoing mission is to support the work of the Governors by providing a bipartisan forum to help shape and implement national policy and to solve state problems.

The members of the National Governors' Association are the Governors of the fifty states, the territories of American Samoa, Guam, and the Virgin Islands, and the commonwealths of the Northern Mariana Islands and Puerto Rico. The association has a nine-member Executive Committee and three standing committees—on Economic Development and Commerce, Human Resources, and Natural Resources. Through NGA's committees, the Governors examine and develop policy and address key state and national issues. Special task forces often are created to focus gubernatorial attention on federal legislation or on state-level issues.

The association works closely with the administration and Congress on state-federal policy issues through its offices in the Hall of the States in Washington, D.C. The association serves as a vehicle for sharing knowledge of innovative programs among the states and provides technical assistance and consultant services to Governors on a wide range of management and policy issues.

The Center for Policy Research is the research and development arm of NGA. The center is a vehicle for sharing knowledge about innovative state activities, exploring the impact of federal initiatives on state government, and providing technical assistance to states. The center works in a number of policy fields, including agriculture and rural development, economic development, education, energy and environment, health, information management, social services, trade, training and employment, and transportation. The priorities for the association's research are set by the Governors.

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Introduction

Americans are deeply concerned about the quality of public education in the United States. A 1996 *USA Today*/CNN/Gallup poll found that education for the first time surpassed crime and the economy as the public's most pressing concern. The shortcomings of the U.S. education system have fueled dramatic debate about what needs to be done to improve schools and increase student learning to ensure that students have the knowledge and skills they need to be productive citizens. Reform proposals, which include systemic education reform, tuition vouchers, privatization, and public charter schools, reflect a diversity of views and opinions. Within the debate, however, there is general agreement that the development of high academic standards is an important first step toward improving academic outcomes.

The movement to develop high-quality academic standards that clearly define what students should know and be able to do enjoys widespread support from the U.S. public. In its 1995 report, *Assignment Complete*, the New York-based Public Agenda Foundation found that a majority of U.S. citizens support setting and enforcing academic standards that prompt students from all socioeconomic backgrounds to achieve at higher levels. Moreover, Public Agenda determined that the public's support for standards is consistent, even when the potential for some students to fail or to be denied diplomas is considered.

The nation's business community also applauds the use of academic standards to improve student achievement. Disturbed by the dismal news reported in *A Nation At Risk* in 1983, the business community at that time began to explore the link between the nation's economic security and the adequacy of its public education system. Several analyses since the early 1980s have pointed to the mismatch between the skills required by employers and those acquired by students, which has fueled business leaders' concerns about the ability of American graduates to compete in an increasingly technological and information-driven society.

In March 1996, the nation's Governors convened with prominent business leaders to lend support for state efforts to implement higher standards and use technology to enhance student learning. Participants at the 1996 National Education Summit discussed the valuable role that standards play in supporting improved student learning and affirmed the need for states and local communities to move forward with their efforts to develop assessment and accountability systems aligned with state standards.

In conjunction with the Governors' efforts to promote standards, the National Governors' Association (NGA) conducted a survey in 1995 to identify the strategies that states are using to develop and implement more rigorous academic standards. The survey found that states' standards initiatives differ from one another in significant ways, including whether

or not they are voluntary, the degree to which they are linked to high school graduation requirements, and the audience for whom they are written. It also revealed that states use different terms for their standards, ranging from goals, content standards, and core competencies to curriculum frameworks, curricular examples, and graduation standards.

To draw lessons from states' experiences, NGA invited education leaders from twelve states to a meeting in Washington, D.C., in May 1995 to share experiences and offer their insights on the standards development process. Representatives from Governors' offices, members of state standards commissions, and policy analysts from state departments of education in California, Colorado, Delaware, Florida, Maryland, New Jersey, New Mexico, North Carolina, Oregon, South Carolina, New York, and Washington discussed issues related to the development of their standards; outlined their efforts to involve educators, the business community, and the general public; and highlighted common obstacles they encountered during standards development and implementation. Although they diverged in some areas, meeting participants agreed that standards encourage students to achieve at higher levels; promote more uniformity in what students are learning in classrooms across states; and help ensure that high school graduates acquire core academic competencies. They also agreed that standards can help schools monitor the academic progress of their students by specifying the skills that students need to know at various grade levels.

Meeting participants also emphasized the need for policymakers to recognize that standards are just one of the many tools that states need to employ in their efforts to improve classroom instruction and boost student performance. They concluded that in order for standards to be truly effective, they must be accompanied by performance standards that articulate specific levels of student performance at various grade levels and by assessments that measure students' progress toward achieving the standards. Representatives at the meeting also argued that state standards must be linked directly to reforms in testing, teacher education, teaching practices, and resource allocation if real change in individual classrooms is to occur.

This report is a direct outgrowth of the NGA meeting. It was written in response to requests by state leaders to document in detail the experiences of a few states promoting standards-based reform. The report highlights the standards initiatives being implemented in Colorado, Delaware, Minnesota, and South Carolina. These states were selected for case studies for two reasons. All four states have made substantial progress in developing high-level content standards, and their experiences should prove instructive to other states considering such initiatives. Moreover, these states have embraced different approaches to developing and implementing standards, reflecting their varying social, political, and governance structures as well as their unique modeling of innovative reform strategies. Collectively, the four case studies, coupled with comments from the NGA meeting participants, provide examples of lessons learned, obstacles encountered, strategies formulated, and insights gained during the development and implementation of rigorous academic standards. It is hoped that readers will benefit from learning about the experiences of these four states.

Merging State Standards with Local Control in Colorado

Encouraged by the vigorous leadership of Governor Roy Romer, the Colorado legislature enacted legislation in 1993 that mandates the development of state model content standards in six core subject areas. Standards in the areas of reading, writing, math, science, history, and geography were designated "first priority," while standards in visual arts, music, civics, economics, physical education, and foreign languages were labeled "second priority." In September 1995, the Colorado State Board of Education adopted state model content standards in the first six priority subject areas. School districts have until January 1997 to adopt their own context standards, which must meet or exceed the state model standards. In addition, districts are responsible for developing curricular and instructional systems that complement the content standards. By June 1, 1996, the state board is expected to approve an assessment design.

The Beginnings

Colorado has maintained a politically divided system of governance for the past several years. Despite their partisan differences, Governor Romer, a Democrat, and the state legislature, which maintains a Republican majority in both houses, are committed to working together to keep education reform a top priority. The dedicated commitment from leaders of both political parties stems from a shared belief that the state's elementary and secondary school system is inadequate. Recent polls indicate that a majority of Colorado parents, businesspeople, and educators believe that the state's public schools are out of touch and out of date; that academic expectations for most students are too low; and that too many students are not acquiring the skills and knowledge they need to succeed in today's world.

To address these issues, Governor Romer convened a special session of the Colorado General Assembly in the fall of 1991. During this special session, the legislature established the Commission on Achievement in Education, whose responsibility was to assess the need for education reform in the state. Members of the commission were appointed by the speaker of the house, the president of the senate, and the Governor. They included house and senate education and party leaders; representatives from the state's business and higher education communities; school administrators; and teachers. Signaling the importance they attached to the commission's work, House Speaker Chuck Berry, Senate President Ted Strickland, and Governor Romer also appointed themselves to serve on the commission.

The commission immediately created several task forces, including a panel charged with outlining a strategy for developing and

implementing a statewide system of academic standards. Pat Sullivan, a state representative, a local school board member, and a longtime supporter of education reform, chaired the task force, whose members represented a wide array of interests, including state education organizations and agencies, higher education institutions, businesses, parents, and the general public.

Making Reform Happen in a Local Control State

One of the toughest challenges faced by the task force was to devise a way to establish high academic standards throughout the state while honoring Colorado's cherished system of local control. Colorado's system of local control is embedded in its state constitution, which forbids the adoption of a state curriculum and grants the publicly elected school board in each of the state's 176 school districts the authority to grant diplomas, set graduation requirements, determine course offerings, and establish curricula. This system is based on the notion that those adults who are closest to the "front line" are most capable of making decisions that affect schools and students.

The student achievement standards task force dealt with this issue by recommending that the state establish model content standards that define what students should know and be able to do and require districts to adopt either the state's model standards or develop their own content standards that meet or exceed the state standards. This approach permits districts to retain their authority to define curriculum, programs of instruction, course offerings, and graduation requirements. Under this plan, the methods for achieving the standards are likely to vary from district to district, but the plan will ensure that all Colorado public school students will be working toward the achievement of substantially similar content standards.

Henry Heikkinen, a university professor who serves on the state Standards and Assessment Development and Implementation Council, whose members are appointed by the Governor to draft the state's model state content standards, highlighted Colorado's unique situation. "One of the questions that was raised at the national level was whether it is possible in a local control state like Colorado to actually do a standards-based statewide sort of reform. And we say yes. We are setting what we view as common expectations for student learning; the content standards express the ends, where you want to be. We are leaving the means up to the districts."

The task force's recommendations about state model standards—along with others concerning assessment, teacher licensure, and professional development—were outlined in a report delivered to the commission. Drafted into bill form and introduced in the house of representatives by Task Force Chair Representative Pat Sullivan, the report became the statutory basis for Colorado's standards-setting effort. The bill (HB 93-1313) was passed by the Colorado General Assembly and subsequently signed into law by Governor Romer in the spring of 1993.

Bill Porter, an education adviser in Governor Romer's office, recalled the political climate at the time the bill was passed. "The Colorado Education Association was supportive of the legislation, but [it wasn't] gung ho about it. The school boards association was supportive but not gung ho. I think they were worried about what state standards would mean for local control. And then we had a lot of confusion about what the standards would be. Would they be academic standards, for example, for math and science—which is what we intended them to be—or would they be standards about values and attitudes in kids, which is what I think a lot of people worried about. So there was a mood of uncertainty among some educators and some school districts."

Soon after the standards writing and public review process got underway, however, the public mood shifted. Porter noted, "Ironically, a lot of people have come on board .... Most districts, including some that were resisting this originally, see this is the right path to go on. They realize that it's something that's going to help restore public confidence in schools."

Legislative Direction for Colorado's Standards-Setting Effort

Colorado's standards legislation, HB 93-1313, outlines a process for the development of both content standards and assessments. First, it calls on the state and local school districts to establish academic content standards specifying what students should learn in kindergarten through grade twelve. Next, it directs the state and districts to develop assessments aligned with the standards. These assessments will enable schools and teachers to evaluate how well students have mastered the material specified under the standards.

The goal of the system is to "eliminate the ceiling" for students who currently are achieving above average and to "raise the floor" for students who have the least success in school. The standards are not intended to require every student to perform at the same level. Rather, they are designed to encourage schools to help each student learn more and achieve at higher levels.

Henry Heikkinen, a member of the state Standards and Assessment Development and Implementation Council, described the purpose of the standards. "As far as I am concerned, if the standards are done well, they should not stand in the way of the best of current practice. In other words, if an enlightened teacher of science is out there, I want that teacher to feel that the standards simply encourage her and give her license to continue doing the good teaching she is doing now. I think sometimes people think that the standards movement is something radically new in terms of vision, and it really isn't. I think we are trying to make common in school what is now the best of current practice."

Colorado's standards-based system also is designed to enhance public accountability. The standards enable educators, parents, students, and community members to have clear and specific expectations for student learning. In turn, the assessments provide valuable information about how well school districts are helping students meet those expectations.

Key provisions of Colorado's 1993 education reform law, including the establishment of the state Standards and Assessment Development and Implementation Council, are listed in Figure 1. The law sets specific dates for completing each phase of standards development.

Developing the Standards

Soon after HB 93-1313 was signed into law, Governor Romer appointed the nine members of the state Standards and Assessment Development and Implementation Council. Its members included three teachers, two local curriculum directors, one high school principal, one district school superintendent, a community college president, and a university professor.

The council's primary goal was to "seek public input." From the beginning, the nine members of the council understood their role to be overseers of an exhausting and painstaking effort that would involve as many Coloradans as possible in thinking through and articulating what Colorado students should learn in school. They did not perceive their role to include sequestering themselves in a meeting room to hash out the content standards by themselves.

Bill Porter, an education advisor in Governor Romer's office who helped staff the council, recalled an early meeting at which council members discussed their role. "They decided their job was not to write the standards per se, but rather to be a traffic cop and to steer this process. The council doesn't see itself as the keeper of all wisdom and the ones who absolutely know what the right standards are. From day one, the council decided these were going to be Colorado's standards. If they were going to make a difference, they had to represent what Coloradans as a whole wanted for their schools—not what nine educators sitting in a room thought was important."

The council began its work in August 1993, when members divided themselves into five subject-area task forces: reading and writing; mathematics; science; history; and geography. Teachers from across the state, as well as

Figure 1
Colorado's 1993 Education Reform Law—Key provisions of HB 93-1313

- The law creates within the department of education a state Standards and Assessment Development and Implementation Council, consisting of nine members appointed by the Governor.
- By April 1995, the council must develop and recommend to the state board of education state model content standards in the "first priority" areas of reading, writing, mathematics, science, history, and geography. In developing the standards, the council must hold at least six public meetings throughout the state to hear testimony regarding the standards.
- The council also is responsible for proposing model professional educator development materials and programs and pilot professional development programs for use by districts at their discretion.
- Taking into consideration the council's recommendations, the state board of education must adopt state standards in the six subjects during the summer of 1995.
- By January 1997, each local board of education, relying on extensive public involvement, must adopt its own set of content standards in the six subjects. School districts may determine which skills and knowledge to include in their content standards, as long as their standards meet or exceed the state models. The law authorizes the state board to withhold its accreditation of any school district that fails to adopt content standards.
- As a second priority, the council must develop and recommend to the board of education state model content standards in visual arts, economics, foreign languages, music, physical education, and civics. No deadline is given for these standards, which are also subject to review and adoption by the board of education.
- During 1995 and 1996, the state Standards and Assessment Development and Implementation Council must develop and recommend to the state board of education proposed state assessments, designed to measure student achievement of the state model content standards in the initial six subject areas. The council also must recommend acceptable performance levels for each assessment.
- Taking into consideration the council's recommendations, the state board of education must adopt a state assessment design and specify student performance levels by June 1996.
- Beginning with the 1996-97 school year, the Colorado Department of Education will begin phasing in the board-approved statewide assessments, with the tests to be administered to fourth graders during the 1996-97 year; fourth and eighth graders during the 1997-98 year; and fourth, eighth, and eleventh graders during the 1998-99 year. The assessments will be given to a stratified, random sampling of Colorado students. Every school with students in these grades will participate in the state assessment program at least once every three years. The goals of the statewide assessment are to provide accurate and detailed information to Coloradans on student academic achievement and, beginning in 1999, to corroborate the results provided by district assessments.
- After developing content standards in the six subject areas, school districts must identify appropriate tests and assessments to measure their students' progress toward local standards. Districts must begin administering these assessments no later than January 1998 and will follow the state phase-in of grades. School districts must use the results of their assessments to diagnose the learning needs of individual students, to provide feedback to students related to their progress toward meeting the standards, and to revise their programs of instruction, as necessary, to assist students needing additional academic support.
- Beginning in January 1998, the department must publish an annual report detailing the percentage of students meeting each performance level on the state model standards. Beginning in January 1999, the annual report also will include data from each district specifying the percentage of students meeting the performance levels established by the local board of education for the district content standards. When students from the district participate in the state assessment, a comparison of district and state results for those students will be presented.
- As necessary, the council will review and recommend revisions of the state model content standards, state assessments, and model professional development programs. The council must seek broad public input in preparing any such revisions.

several experts in higher education, were then invited to serve on the task forces. Their mission was to draft standards in each subject area that would be disseminated for public review and comment.

The teachers appointed to the task forces were selected on the basis of their prior leadership in education reform and standards setting. "These were all teachers in the field who were pushing standards in their own schools or districts," said Bill Porter. Altogether, more than 100 individuals, the majority of whom were teachers, served on the task forces.

With a few paid staff members in the Governor's office and the department of education handling the administrative and logistical work of the council, the volunteer task force members were free to focus on their main responsibility—to consider what is most important for students to learn in each subject area. "We tried to have the teachers focus on the important thing, which was to clearly express what they really valued," said Henry Heikkinen.

Between August 1993 and December 1994, the task forces produced three separate drafts of content standards in their subject areas. Each of these discussion drafts endured an extensive public review process, with thousands of Coloradans contributing comments and suggestions. At each stage, this broad public input resulted in significant changes in the gradually evolving content standards. On April 1, 1995, the council submitted to the state board of education its final recommendations for model academic content standards for kindergarten through grade twelve in the six subject areas of reading, writing, mathematics, science, history, and geography.

Three Drafts, Thousands of Suggestions

It is difficult to imagine a public review process more inclusive and thorough than the one carried out in Colorado by the state Standards and Assessment Development and Implementation Council. The council's first discussion draft, completed in February 1994, was distributed to more than 3,000 school board presidents, school district superintendents, and chairs of district accountability committees; education and parent advocacy groups; presidents of state colleges and universities; public libraries; and members of the public who had requested copies. In addition, most school districts distributed copies to their schools for staff and parents to review, and many districts convened public meetings for additional discussion and comment.

The first draft contained response forms that asked citizens to evaluate each content standard on a scale from one to five, based on the following five questions.

- Is the content standard a statement of what a student should know or be able to do?
- Is the content standard specific and clear?
- Is the content standard meaningful for today's world?
- Is the content standard inclusive (i.e., something every child can learn)?
- Is the content standard a worthy goal for student learning?

The council received from 700 to 1,300 response forms in each subject area. Although most reviewers supported the general intent of each broad content standard, many raised concerns about specific ideas or skills included as benchmarks of student progress or suggested fine-tuning to clarify the intent of the broad statements and grade-level benchmarks. Task forces reviewed every response and substantially revised or rewrote their proposed model content standards to incorporate these suggestions.

Some of the comments received in this first round suggested that the first draft contained too much "education jargon," which readers found confusing or incomprehensible. "What do you mean?" was a comment frequently expressed by respondents, said Dianne Harper, co-chair of the council. Before releasing the second discussion draft, the council met with a group of noneducators to discuss the revisions and to make certain the wording used in the second draft was understood by all readers.

The group of outside reviewers included district school board members, members of the Denver Metropolitan Chamber of Commerce, employers from outside the Denver area, and parents.

"We decided we had to be much more explicit," said Harper. "We began to talk about '7-Eleven' language. That became our buzz word. We kept asking ourselves, 'If we posted this in a 7-Eleven, would people understand it?'"

The second discussion draft was distributed in May 1994 to more than 5,000 people, including all school board presidents; all school district superintendents and chairs of district accountability committees; all boards of cooperative educational services directors; professional, business, and parent advocacy groups; state college and university leaders; all public school principals; and more than 800 individuals who requested copies. Copies also were sent to public libraries.

To maximize public comment on the second draft, the council hosted fifteen public meetings throughout Colorado where citizens met in small groups to discuss the draft content standards. Organized by the League of Women Voters, the meetings drew more than 1,000 people.

In addition, the Colorado Association of Commerce and Industry, the Colorado Association of School Boards, and the Governor's office held "brown bag" lunch discussions on the draft content standards at company worksites across the state. Discussions were held with employees at the Gates Corporation, Kodak Corporation, Hewlett-Packard, and the Farmers' Insurance Group.

For this second round of comments, the council designed a response form that encouraged thoughtful critiques, explanations, and detailed suggestions for every level of the content standards. Reviewers were asked to indicate which ideas, knowledge, and skills in the standards they liked the most, which they thought were missing, and which caused them concern. The council also asked whether the standards were specific enough.

The council studied each of these detailed written responses, incorporating many suggestions into the third and final draft (see Figure 2). Although reviewers offered constructive criticism on areas that needed improvement or better wording, the council was pleased to find that people who had commented on the first discussion draft were satisfied with the changes between the first and second drafts. The reviewers believed the council had done a good job of listening.

The council's final discussion draft, released in December 1994, was distributed to 6,000 people throughout Colorado. To ensure adequate public review and comment on this final version, the council gave reviewers more than two months to read and to respond to the draft.

The council also planned several special public forums for public comment, which were intended to engage an even larger and more diverse group of citizens in the process of reviewing the standards. For example, the council worked with a cable television company to produce a half-hour special on standards and assessments and launched an extensive media campaign to notify people about the cable program. School districts, PTA chapters, and chambers of commerce across the state were encouraged to form groups to view the telecast, which explained the requirements of HB 93-1313, discussed the purpose of standards, and encouraged people to discuss and review the final discussion draft.

Finally, the council held a day-long summit on the standards in December 1994. Co-hosted by the Colorado Statewide Parent Coalition, which includes parents and community members from numerous ethnic groups, the primary purpose of the summit was to explain the intent of the standards and to solicit comments and concerns from coalition members. About 200 people attended the summit.

Figure 2
Listening to the Public: How One Task Force Managed the Rewriting Process

Council Co-Chair Dianne Harper, who served on the reading and writing task force, described how her group went about reviewing the huge volume of comments it received. "First, another member of the task force and I read through every piece of correspondence on our own. Then we divided the comments into three piles. When the task force met, we divided the group into three subgroups and gave a stack of comments to each subgroup. We asked the subgroups to read through their piles and identify the major concerns—things that seemed to show up over and over again. Then we all came back into the large group, and each subgroup reported on the major concerns it had found. Of course, it is no surprise that many of the concerns were duplicated. We made a list of these major concerns and from that list we prioritized. Then we went back to the drawing board and again divided into subgroups and went to work on revising the standards. Then we would bring the drafts back to the large group and tear them apart again."

Throughout the process, the reading and writing task force took steps to make sure that members maintained their objectivity. For example, to prevent individuals from becoming so vested in one version of a standard that he or she had trouble changing it, the composition of the subgroups was changed from meeting to meeting.

Still, there were times when progress seemed excruciatingly slow. "Occasionally in a subgroup we would find we were stumped. At those times, we would take the issues back to the task force as a whole for consideration," said Harper. "A lot of it for us was finding a process that worked. We spun our wheels a lot," she admitted.

Harper explained that the council was not able to address certain concerns that fell outside the intent of the governing legislation. "Some concerns we felt we could address and others we just said, 'Well, under the letter of the law we can't do that,'" she said. In particular, the council could not allow itself to become overly specific in dictating what schools should teach. "Where we have had so much difficulty in writing and explaining these standards is in the fact that we are not writing curriculum. Colorado is not a state curriculum state. We are giving school districts the framework. We are giving them goalposts where they need to end up, but the game plan is theirs."

She added, "Of course, we are still getting flack that the standards are not specific enough. But if we add that specificity, then we are usurping the local districts' right to implement them using the instructional methods that they feel are right for their students."

Throughout the comment period, reviewers were encouraged to fill out forms indicating whether they agreed, disagreed, or were unsure about the intent of each area of the content standards. Participants also were asked whether they believed the specific grade-level benchmarks were too high, too low, or just right. In addition, the council encouraged participants to provide reasons for their opinions and to offer any other comments.

Thousands of Coloradans provided feedback on the final discussion draft. The council spent the entire month of March 1995 reviewing and discussing the public comments and making final revisions to the draft standards. On April 1, the council presented its final recommendations for model academic content standards in the six core subjects to the state board of education. In a letter accompanying the submission, council co-chairs Harper and Tom Maes said, "We believe these proposed content standards now represent a strong and clear consensus about what Coloradans want their children to learn in school in these six subject areas. While some will always disagree with the content and substance of these standards, the council is confident this final set of proposed standards reflects what most Coloradans told us they wanted in the standards."

Under HB 93-1313, the final content standards for Colorado must be issued by the state board of education, an elected body that governs the Colorado Department of Education.

The board reviewed the council's recommendations during the summer of 1995, and it was free to make revisions. Council members and key task force participants had an opportunity to meet with board members and explain the rationale behind each of the standards. The board issued its stamp of approval to a final set of standards in September 1995.

Assessment Development

Although the development of the proposed standards was a difficult and time-consuming process, it marked only the beginning of the

council's job. In the summer of 1995, the council began work on the second crucial phase of its mission—developing an assessment framework for each of the standards. These frameworks will ultimately define the methods that will be used in the state assessment program to measure student progress toward the content standards. A public review and comment process, similar to the one used to develop the proposed content standards, also is being used to finalize the assessment frameworks. The state board will adopt an assessment design by June 1, 1996.

Sample Standard

The council gave a great deal of thought to the wording of its proposed content standards. In particular, council members paid close attention to their choice of verbs in describing exactly what they want students to know and be able to do.

"The verb is essential, because the verb is what drives the assessment," explained Bill Porter. "For example, consider these two different standards at the fourth-grade level—'distinguish living from nonliving things' and 'describe different types and uses of the earth's material.' Well, there is a big difference between 'distinguish,' in terms of what the assessment might look like, and 'describe.' 'Distinguish' could easily be a multiple-choice question, whereas 'describe' is a more complicated type of activity."

Porter continued, "So the verb you choose is critical to what you really want to accomplish. We decided we would not use the verb 'understand' because it is unclear what it means. Instead the council decided to use 'describe,' 'explain,' 'determine,' 'recognize,' 'identify,' 'observe,' 'measure,' 'record,' 'analyze,' etc. We did not use 'understand' because we said, 'How do you measure 'understand'?'"

In addition, council members wanted the standards to be clearly stated for a broad audience, not merely for education professionals. Henry Heikkinen noted how difficult it was for the council to express its ideas in ways that average citizens could comprehend. "It's very, very difficult to put on paper what your real intentions are, particularly about things like learning," he said. "And so we finally weren't able to judge our own work because we were too close to it. So that's when you need to do the '7-Eleven test,' as we called it. That is, to give concerned, average community members a chance to read the standards and see if they can extract the kind of meaning that we had in mind—not educators, just normal people." When the early versions of the standards were put out for public review, said Heikkinen, "We were sobered but also gratified in a way to find out that we simply were not communicating very well."

Early in the standards-writing process, the council decided on a format for its proposed content standards. Each subject area contained six overall standards, which are accompanied by descriptions of what students should know and be able to do in kindergarten through grade four, grades five through eight, and grades nine through twelve. In addition, each standard is followed by a short paragraph explaining the rationale behind the standard.

The six model content standards for reading and writing are presented in Figure 3. The complete text of standards 1, 2, and 4, including the rationales and the benchmarks for the various grade clusters, is contained in Figure 4.

Figure 3
Colorado Model Content Standards for Reading and Writing

Standard 1: Students write and speak for a variety of purposes and for diverse audiences.

Standard 2: Students write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling.

Standard 3: Students read and understand a variety of materials.

Standard 4: Students apply thinking skills to their reading, writing, speaking, listening, and viewing.

Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technological sources.

Standard 6: Students read and recognize literature as an expression of human experience.

Colorado has also worked with the Colorado Geography Alliance to develop a state curriculum framework in geography. The Geography Frameworks Project, funded by a FIRST grant, serves as a bridge between state standards and individual classrooms. Teams led by a geographer and a lead teacher developed model units.

Dollars and Cents

How has Colorado funded the work of the Standards and Assessment Development and Implementation Council? "On a wing and a prayer," explained Bill Porter. Thus far, the state has managed to support the council's work without appropriating any new money. This was accomplished by means of a provision in HB 93-1313 that suspended the existing state assessment program for two years, with the understanding that the funds would be used instead to pay for the standards development activities of the council.

Operating costs for the council's efforts during the 1993-94 school year were approximately $210,000. These funds covered printing and mailing expenses; meeting expenses, including travel, food, and lodging for council and task force members; and salaries for substitutes for the teachers who served on the various task forces. In addition to these operating costs, the Colorado Department of Education paid for 3.8 full-time equivalents (FTEs) to provide staff support for the council. About 1.1 percent of this FTE amount was spent on administrative support, while the rest was dedicated to professional work. Department professionals who worked with the council included Assessment Director Wayne Martin, who spent the majority of his time on council work, and numerous subject area specialists, who each spent about one-third of their time on council work.

During the 1994-95 school year, the operating costs for the council totaled approximately $200,000. The department provided five FTEs, about 1.5 percent of which was spent on administrative responsibilities. During the second year, Wayne Martin spent about three-fourths of his time on council work, while the subject-area specialists spent about one-quarter of their time on the project. The staff support provided by Governor Romer's office amounted to roughly one-half to three-quarters of an FTE.

Figure 4
Complete Text of Colorado Model Content Standards 1, 2, and 4 for Reading and Writing

STANDARD 1: Students write and speak for a variety of purposes and for diverse audiences.

In order to meet this standards, students will be able to:

- write and speak for a variety of purposes, such as telling stories, conveying technical information, explaining concepts and procedures, and persuading;
- write and speak for audiences, such as peers, teachers, and the community;
- draft, revise, proofread, and edit written communications;
- use a variety of devices, such as figurative language, symbolism, dialect, and precise vocabulary, to convey meaning;
- organize written and oral presentations using strategies such as lists, cause/effect relationships, comparison/contrast, problem/solution, and narration; and
- use handwriting and/or word processing to produce a product that is legible.

RATIONALE: *Writing and speaking are essential tools for learning, for success in the workplace, and for responsible citizenship. Developing a range of writing and speaking abilities requires extensive study, practice, and reflection. Therefore, students need frequent opportunities to write and speak for different audiences and purposes, and they need to be able to communicate expressively, informatively, and analytically. Growth in writing and speaking abilities occurs by applying skills to increasingly challenging communication tasks.*

GRADES K-4—In grades K-4, what students know and are able to do includes:

- generating topics and developing ideas for a variety of writing and speaking purposes *(for example, telling a story, publishing a class newsletter, writing a letter to an adult, writing or orally presenting a book report, creating and producing a play, introducing a speaker or an event, narrating a presentation)*;
- organizing ideas as they plan their speaking and writing;
- choosing vocabulary that communicates their messages clearly and precisely;
- adapting word choice to various audiences;
- receiving feedback as an aid to revising and editing speech and writing for a larger audience; and
- producing readable documents with legible handwriting and word processing.

GRADES 5-8—As students in grades 5-8 extend their knowledge, what they know and are able to do includes:

- writing stories, letters, and reports with greater detail and/or supporting material;
- choosing vocabulary and figures of speech that communicate their messages clearly;
- drafting, revising, editing, and proofreading their writing;
- applying skills in analysis, synthesis, evaluation, and explanation to their writing and speaking; and
- incorporating source materials into their speaking and writing *(for example, interviews, news articles)*.

GRADES 9-12—As students in grades 9-12 extend their knowledge, what they know and are able to do includes:

- using fictional, dramatic, and poetic techniques to write imaginatively;
- conveying technical information in a written form appropriate to the audience;
- forming and supporting an opinion using various forms of persuasion (factual or emotional) in speaking and writing;
- incorporating material from a wider range of sources *(for example, newspapers, magazines, interviews, technical publications, books)* in their writing and speaking;
- selecting a focused topic and drafting, revising, editing, and proofreading a final copy for a larger audience; and
- writing in various specialized fields and career or academic interest areas *(for example, scientific, technical, business communications)*.

Figure 4 (continued)

For students extending their English/Language Arts beyond these standards, what they know and are able to do **may** include:

- writing longer, formal papers using sources such as technical journals and government publications to support an original thesis;
- making oral presentations for audiences within or outside the school in a variety of media;
- experimenting with stylistic elements such as voice, tone, and style;
- using style books or technical manuals to become self-evaluators of their writing; and
- analyzing, synthesizing, and evaluating a variety of written and spoken material.

STANDARD 2: Students write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling.

In order to meet this standard, students will be able to:

- apply correct grammar in speaking and writing;
- apply correct usage in speaking and writing;
- use correct sentence structure in writing; and
- demonstrate punctuation, capitalization, and spelling skills.

RATIONALE: *Students need to know and be able to use standard English. In some circumstances (for example, in writing or telling short stories, narratives, poetry, etc.) students may use nonstandard English, but they are expected to know when it is appropriate to do so. Proficiency in this standard plays an important role in how the writer or speaker is understood and perceived. All skills in this standard are reinforced and practiced at all grade levels and should be monitored by both the teacher and student. In order to help students become independent learners and use these lifelong skills beyond the classroom, teachers must provide support and skills to enable students to evaluate and correct their own work.*

GRADES K-4—In grades K-4, what students know and are able to do includes:

- using subject/verb agreement;
- using modifiers;
- using correct capitalization, punctuation, and abbreviations; and
- spelling frequently used words correctly using phonics rules.

GRADES 4-8—As students in grades 5-8 extend their knowledge, what they know and are able to do includes:

- using correct pronoun case, irregular noun and verb forms, and subject-verb agreement involving comparisons in writing and speaking;
- using additional modifiers, homonyms, and homophones in writing and speaking;
- using simple, compound, complex, and compound/complex sentences in writing and speaking;
- punctuating and capitalizing titles and direct quotations and using possessives and correct paragraphing in writing; and
- using prefixes, root words, and suffixes correctly in writing and speaking.

GRADES 9-12—As students in grades 9-12 extend their knowledge, what they know and are able to do includes:

- using pronoun reference correctly in writing and speaking;
- using phrases and clauses for purposes of modification and parallel structure in writing and speaking;
- using internal capitalization and punctuation of secondary quotations in writing;
- using manuscript forms specified in various style manuals for writing *(for example, indenting for extended quotations, precise placement and form of page numbers, appropriate line spacing)*; and
- refining spelling skills and becoming a self-evaluator of the mechanics and grammar of their writing and speaking.

Figure 4 (continued)

STANDARD 4: Students apply thinking skills to their reading, writing, speaking, listening, and viewing.

In order to meet this standard, students will be able to:

- make predictions, analyze, draw conclusions, and discriminate between fact and opinion in writing, reading, speaking, listening, and viewing;
- use reading, writing, speaking, listening, and viewing to define and solve problems rationally and creatively;
- recognize, express, explore, and defend points of view orally and in writing;
- identify the purpose, perspective, and historical and cultural influences of a speaker, author, or director;
- evaluate information in light of previous experiences and the purposes for reading, writing, speaking, listening, or viewing; and
- evaluate the reliability, accuracy, and relevancy of information.

RATIONALE: *Students use reading, writing, speaking, listening, and viewing to think and learn by focusing and attending to the task at hand. By moving beyond a literal interpretation of text to a more thoughtful analysis of an author's, speaker's, or director's purpose and perspectives, students practice and improve their higher level thinking skills. Students need to recognize and evaluate different points of view in order to follow a line of reasoning to its logical conclusion. Students need to reflect on their writing and reading and work toward improvement.*

GRADES K-4—In grades K-4, what students know and are able to do includes:

- recognizing an author's point of view;
- predicting and drawing conclusions about stories;
- recognizing fact and opinion in written and spoken forms;
- using reading, writing, speaking, and listening to define and solve problems;
- responding to written and oral presentations based on personal experience as a reader, listener, and speaker;
- formulating questions about what they read, write, hear, and view; and
- practicing listening skills in relation to understanding directions.

GRADES 9-12—As students in grades 9-12 extend their knowledge, what they know and are able to do includes:

- recognizing an author's point of view, purpose, and historical and cultural context;
- using reading, writing, listening, speaking, and viewing to solve problems;
- broadening and enriching their experience as readers and knowing what constitutes literary quality based on elements such as the author's control of the storyteller's voice, the author's selection of significant details, theme development, and the author's reflection of events and ideas of his or her lifetime; and
- critiquing the content of written work and oral presentations.

For students extending their English/Language Arts beyond the standards, what they know and are able to do **may** include:

- applying principles of formal logic to written and oral texts.

New Directions in Delaware

Under its New Directions for Education in Delaware initiative, the Delaware Department of Public Instruction has coordinated the development of content standards in mathematics, science, English language arts, and social studies. Prepared by specially appointed curriculum framework commissions and subjected to both public and professional review, the four sets of content standards were adopted by the state board of education on June 8, 1995. During the upcoming implementation phase, local school districts are expected to adapt their curricula to fit the standards, while the department will work with others to develop statewide assessments linked to the standards. Meanwhile, in a second stage of the standards writing process, newly formed curriculum framework commissions are working to draft additional content standards in visual and performing arts, foreign languages, business/marketing, and agriculture. In 1996 and 1997, Delaware will draft standards in technical education, comprehensive school health, allied health occupations, trades, and home economics. All major components of the initiative are expected to be implemented by the 1997-98 school year.

Launching New Directions

New Directions for Education in Delaware, an initiative to develop statewide education content standards and assessments, is the brainchild of State Education Superintendent Pascal D. Forgione Jr. Forgione took office in December 1991 after serving as the executive director of the National Education Goals Panel in Washington, D.C., where he advocated the use of academic content standards to help states make progress toward the National Education Goals.

Upon arriving in Delaware, Forgione undertook what he described as a "crusade" to improve the quality of education in the state. During his first 100 days in office, he visited every school district in the state and said, "Come on, we've got to have an agenda. Where do we want to go? What are we about?" In meetings with district officials, Forgione emphasized the significance of setting high expectations for student achievement; the need for high-quality assessments that measure students' progress toward the standards; and the importance of local control in curriculum and instruction. These notions resonated with local educators. "The districts bought into the philosophy of standards, assessment, accountability, and local control," Forgione explained.

Upon returning to Dover, Forgione, with the help of the local superintendents, constructed a five-year plan for developing and implementing content standards and related assessments. The plan was adopted by the state board of education in May 1992 and was inaugurated on July 1, 1992. Key components of the New Directions plan include:

- setting clear, rigorous standards on what all Delaware students should know and be able to do;
- teaching children by participation in activities using real-world problems;
- measuring students' performance by having them demonstrate what they have learned;
- holding schools accountable for students' progress;
- ensuring that all children start school ready to learn;
- creating an environment with minimal disruption;
- allowing each school district to design its program; and
- preparing students for a successful transition to work or to higher education.

The reform plan also calls for three levels of partnership—among school partners, community partners, and development partners. In February 1993, the department of public instruction outlined the roles and responsibilities for each group of stakeholders and established four educational priorities to guide reform—standards, assessments, capacity building and implementation, and leadership provided by the business community.

Securing Funding

To implement his reform plan, Forgione devised a clever funding scheme—one that is unique among states pursuing standards-based reforms. Using the state's commitment of $7 per student as a leveraging point, he appealed directly to Delaware's nineteen local school boards for help in funding the initiative. The school boards eventually agreed to reallocate $5 per student from their existing resources toward the development of standards and assessments. With approximately 100,000 students in the state, this pledge amounted to nearly $500,000 a year. The school boards agreed to fund the partnership for five years. "They had to reallocate [the money] from someplace—I didn't care where. I told them I knew they couldn't commit money in future years any more than I could. But I said, 'I trust you. Let's have a partnership and you put up the $5 per student the first year and maintain the partnership,'" said Forgione in a June 1995 interview. "So far, it has held together for three years."

By securing funding, Forgione hoped to instill a sense of loyalty to the reform movement among the local school boards. "To be honest, I felt it was very important for the districts to feel fidelity and ownership toward this reform, and people don't have that unless they make a commitment. How do you get people to make a commitment? Well, the easiest way is to get them to put some money up. But it was also very difficult, because the locals did not respect the state here." By convincing local school boards to invest in New Directions, Forgione could ensure that they would have a stake in its success.

In addition, Forgione convinced the Business Public Education Council, an organization representing the state's business community, to match the $5 contribution made by the local districts. "Dr. Forgione was able to get the district money because he leveraged it with state and business commitments," said Helen Foss, project director for the Delaware State Systemic Initiative. "It was a very difficult balancing act."

Finally, Forgione solicited local foundations for financial support. He asked them to match the state contribution of $7 per student but was unable to secure funding from them. Nevertheless, between the funds committed by local districts, the state board, and the business council, Forgione succeeded in generating $17 per student, or $1.7 million, to spend on implementing Delaware's most sweeping education reform movement to date.

A New Attitude

As described in the *Citizen's Guide to New Directions in the Classroom*, the New Directions initiative is intended to improve the academic achievement of all Delaware students. It is based on the principles that every student should have the opportunity to participate in meaningful educational experiences; be held to high expectations of knowledge and

performance; be measured against uniform standards; and be provided with help to attain the standards.

New Directions represents a repudiation of the belief that only an elite number of students can reach high levels of academic achievement. This attitude, according to the *Citizen's Guide*, "causes many students to expect less of themselves and to take less responsibility for their own learning. They soon give up on school since they see that their achievement is only measured against other students, not against a clear set of standards of excellence."

Such clear standards of excellence form the foundation of New Directions. The content standards outlined in New Directions, which were finalized in June 1995, specify the knowledge and skills that students are expected to acquire in the core academic disciplines. They require students to demonstrate what they can do by gathering information, reasoning well, solving problems, and communicating effectively.

As one Delaware education leader noted, the New Directions initiative is highly optimistic. "The notion of high academic achievement for all students is a vision, a hope. It is really easy to say that all kids can learn at high levels. Well, now we've got to start making it happen. Then maybe those words will mean something. At this point, it is an unproven idea."

The standards that have been developed thus far signal a departure from the way Delaware children were taught in the past. According to Delaware PTA President Lloyd Maier, "Previous standards expected students to know a body of knowledge. The new standards will require students to apply that knowledge through practical demonstration. This is definitely raising our expectations of what students can do."

Earlene Gillan-Smith, president of the Delaware State Education Association, believes that the new standards will generate more hands-on learning experiences for students. "We are trying to relate what kids learn in school to what is current in the world. We feel very strongly that if we can relate lessons to everyday occurrences—for instance, having kids build a fence instead of just have a blackboard lesson on parameters—kids can see how that lesson relates to something they may want to do."

Delaware's business community, which has been an active partner in the New Directions effort through the Business Public Education Council, is a strong proponent of hands-on learning and stresses the importance of students' critical thinking skills. "We are finding that this is extremely important to the business community. Kids today may have the knowledge but they can't apply that knowledge to something that they really need to do." This assessment was echoed by other businesspeople in a 1992 survey of state employers conducted by the council, which found that more than 40 percent of employers felt that high school graduates' writing skills were inadequate. "We have some very forward-thinking business leaders," said Foss, who added that the businesspeople who have been most involved in supporting New Directions "are the ones who have been most astute in their understanding of the organizational development issues in their own businesses and see similar needs in the school system. They understand that the system itself has to change."

Delaware businesses have much to gain by supporting the school reform effort. "It is a self-serving motive in the most positive sense. Over the years, they have seen that they have not been able to expand their businesses in areas of the state where we have not had a good academic record. They are looking at their futures and realizing that unless the state has a dynamic education system, they won't be able to keep up," explained Foss. Closing the gap between the skills desired by employers and the skills acquired by Delaware high school graduates is the guiding premise behind the standards-based reform effort.

Politics, Politics

Since its inception in 1992, the New Directions initiative has enjoyed strong gubernatorial

support. In fact, signaling its popularity in both Democratic and Republican camps, the program endured a 1993 transition in the Governor's office, when Democrat Tom Carper replaced Republican Mike Castle. This bipartisan support has not prevented New Directions from being subjected to political attack, however. For example, during the 1995 legislative session, supporters faced attempts to withdraw funding for New Directions and reallocate the money toward school discipline programs.

"It was very seductive when [opponents of standards-based reform] thought of that one," said Superintendent Pascal Forgione. "It lets everyone rally and say, 'We love your standards but we'd rather do discipline.' Or, 'We love your standards but we've got to first reduce class size.' It becomes the ruse: 'We love your standards *but*'....What they mean is, 'Let's just kill the reform.' It's like cutting off its oxygen."

A powerful lobbying effort by a broad constituency of groups that supported the New Directions initiative from its genesis was critical in staving off this threat. In addition to the state board of education and the state's nineteen public school districts, the partnership included the higher education community, the statewide PTA, the Delaware State Education Association, the Delaware Association of School Administrators, the Delaware School Board Association, and—of prime importance when it comes to political battles—the Business Public Education Council.

"The partnership is a fragile thing," said Forgione. "At times, certain members really get irritated because it seems like the state leadership has taken over. But whenever hard times come, whenever someone challenges us, we all rally together." He noted that when the threat to terminate New Directions arose, "The business community came full bore saying, 'How dare you!' Then members of our teacher's union went after their colleagues in the legislature. Everyone stayed together."

The end result was a compromise under which the department agreed to reallocate $900,000 toward school discipline programs. The compromise was led by Governor Carper, who recommended a major new funding initiative to establish discipline intervention programs in every school. According to gubernatorial education adviser Peg Bradley, "We are not going to back down on standards. Delaware will have safe and disciplined schools whose students meet rigorous standards."

Forgione is certain that controversy will arise again in the future. However, he believes that the more progress made by New Directions, the longer the program will survive. To this end, Forgione is encouraging schools and districts to forge ahead to build curriculum, to invest in needed instructional materials, and to work on staff development to support the implementation of the approved standards. "If we took our foot off the gas pedal, the reform would just disintegrate. You've got to keep up the pace. Luckily, at this point, it looks like we may make it," he said.

Developing the Content Standards

Although the idea of developing academic standards was a department of public instruction initiative, the specially appointed curriculum framework commissions were charged with writing the standards. The first four commissions, which drafted standards in mathematics; science; English language arts; and social studies, which includes civics, history, geography, and economics, convened during the summer of 1992. The second four curriculum framework commissions are working to draft additional standards in visual and performing arts, foreign languages, business/marketing, and agriculture. The forty-five to forty-eight member commissions are composed of educators from every school district, parents, business and community leaders, higher education representatives, and curriculum experts.

Carol O'Neill Mayhew, a team leader for curriculum support in the department, described the process used to select members of the commissions. Initially, the department solicited nominations through newspaper advertisements and letters to numerous

offices, organizations, and institutions throughout the state. "We asked people to tell us who they thought would be good at this," said Mayhew.

The department received hundreds of nominations, which were entered into a matrix representing the different types of individuals desired for the commissions. The department sought to guarantee a proper balance of racial, gender, geographical, and professional representation. It wanted to ensure the participation of a wide range of experts—teachers from different grade levels, administrators, business leaders, parents, postsecondary educators, and other experts—as well as the participation of every school district in the state.

Mayhew noted that there was no shortage of qualified candidates. "We were two and three deep on good possibilities for a lot of the slots," she said. Based on staff recommendations, State Superintendent Forgione approved a final list of individuals asked to serve on each commission. Mayhew estimated that one-half to two-thirds of the members on each commission were teachers, administrators, or other school practitioners. Each commission was headed by a pair of co-chairs, including a practicing teacher and a representative from either the higher education or business communities. Department staff did not serve on the commissions but were responsible for coordinating meetings and logistics.

The curriculum framework commissions in mathematics, science, English language arts, and social studies worked for almost three years (October 1992 to June 1995) drafting and revising the standards documents. Throughout the process, members of the commissions consulted with national and international education experts to decide which topics should be included in the standards. They also conferred with officials in other states undertaking similar reform efforts. For example, the English language arts and social studies commissions reviewed the curricula and assessments implemented in California, Florida, and Maryland; the science commission investigated science standards adopted in Japan and also sought advice from both higher education institutions and the National Academy of Sciences; and the mathematics commission consulted the standards developed by the National Council of Teachers of Mathematics (NCTM) and communicated with a number of national experts in math, including NCTM's Tom Romberg.

Volume Two: Classroom Performance Models

After completing the content standards, the four curriculum framework commissions drafted a volume of classroom performance models to accompany the content standards. These documents contain five to ten detailed lesson plans that are intended to show teachers how particular standards might be translated into instructional and learning activities in the classroom.

"The classroom performance models are examples of how a teacher might take a standard and play it out completely," said Mayhew. "We've got samples of student work, we've got directions for the teacher. It's a total package for a teacher." Mayhew emphasized that the documents are not designed to prescribe instruction but simply to serve as reference guides. "We don't mean to say to teachers, 'You must do these tasks in order to meet the standard.' We're just saying that this is an example of a complete task that will lead a child in the direction of meeting a standard."

Written for Professional Educators

According to Mayhew, the commissions did not make a concerted effort to write the standards in lay language. As a result, some educators who reviewed the standards complained that the language was too technical, and asked the commissions to make the wording easier to understand. On the whole, however, making the standards readily understandable for the average citizen (i.e., in "7-Eleven" language, as Colorado's writing team tried to do) was not a priority for the Delaware curriculum framework commissions. Rather, the commissions emphasized articulating the important academic content or "big ideas" in a discipline that undergird teaching and student learning. "I think they [the final standards] are still for

teachers," said Mayhew. "They are not written for just anybody off the street."

Mayhew noted that the technical nature of the documents created some problems during the public review process. Although a layperson's guide to the standards was published for distribution to the general public, citizens could readily obtain copies of the full-length, technical drafts. Approximately 16,000 copies of each of the draft standards documents were distributed.

"You had to keep reminding people that these were written for teachers and curriculum people who know the content. These are not documents that the teachers teach from; a teacher isn't supposed to pick up a document and talk to the kids that way. They are intended to drive the district curriculum, and from the district curriculum are derived lesson plans. That is something we have to remind people of a lot," she said.

The Review Process

The draft standards underwent extensive review. Department staff described the five stages in the review process.

- **Expert Review.** Each commission obtained feedback from local and national subject-matter experts to ensure that the standards compare favorably with those from other states and countries.
- **Educator Review.** Drafts of all four sets of standards were sent to all Delaware teachers and teacher aides as well as to administrators, department of public instruction staff, support staff, local school board members, higher education officials, and the state PTA. The drafts, printed on newsprint in tabloid form, contained a reviewer reaction form in the centerfold that could be returned, postage-free and preaddressed, by mail. In addition, conferences and briefings on each of the draft standards were held in each county, with at least one teacher from every school building invited to attend.
- **Public Review.** A major publicity event, complete with a reception at the Governor's mansion and speeches by Governor Carper and U.S. Secretary of Education Richard Riley, was held in February 1995 in Dover to focus public attention on the draft standards and the New Directions effort. This event was followed by a series of county forums and presentations to smaller groups of interested citizens. Rather than send out copies of the draft standards, which were lengthy and quite technical, the state board of education published the *Citizen's Guide to New Directions in the Classroom*, a graphically exciting and easily readable document that explained in lay terms the purpose of the reforms and summarized the standards in the four subject areas. Although the *Citizen's Guide* did not contain a response form, readers were invited to share their comments by phoning or writing the department of public instruction.
- **Commission Response.** The four commissions reviewed and synthesized all suggestions and made necessary revisions, completing their work in May 1995. The standards were then presented to the state board of education and to the general assembly.
- **State Board Action.** The state board of education reviewed the standards and formally approved them on June 8, 1995.

Educators' Reactions

The Delaware Education Research and Development Center, which conducted an independent analysis of educators' comments on the four sets of draft standards, found that professional educators not only believed in the need for high academic standards, but also supported the standards developed by the curriculum framework commissions. In general, reviewers believed that the draft standards set high expectations for students, captured the most important subject matter within each academic discipline, and were developmentally appropriate.

A survey of Delaware's 6,800 teachers, conducted by a national polling company for the Delaware State Education Association, echoed these findings. According to the survey, 92 percent of respondents were familiar with

the New Directions education reform program, and 63 percent were supportive of it. In addition, an impressive 87 percent of teachers said they "strongly agree" or "tend to agree" that statewide content standards should be established, and an even higher proportion (92 percent) agreed that student progress toward meeting the state content standards should be measured.

The analysis also found that educators who commented on the draft standards expressed concern about the state's ability and commitment to provide schools with the resources and support needed to implement the standards. Specifically, they were concerned about the availability of professional development activities, curriculum resources, and critical instructional materials. Paul LeMahieu, director of the Delaware Education Research and Development Center, summarized educators' concerns. "The schools are keenly aware that they do not have the wherewithal to develop curriculum on their own. What you are hearing, in effect, is the suggestion that [standards development] is an empty and disingenuous exercise if it is simply a divestiture of responsibility—that is, if the state is essentially saying, 'We'll publish a volume, you folks change the world.'"

Explaining New Directions to Teachers and Citizens

In addition to seeking comments on the draft standards, leaders of New Directions made extensive efforts to educate both teachers and the public about the reforms while they were being developed. According to the department of public instruction's Carol O'Neill Mayhew, one of the department's most important and successful efforts was to orchestrate a statewide inservice day in February 1994, which was devoted to informing teachers about New Directions. Conducted simultaneously in every school in the state, teachers viewed the videotape about New Directions, heard a presentation by a trained speaker, and participated in demonstrations of new instructional practices. "We had six training sessions to prepare the presenters. We gave them a script and overhead displays. Every teacher in every district in the state had the same presentation on the same day about New Directions and the standards," said Mayhew.

After the presentation, teachers participated in special sessions, one for each of the subjects covered by the initial standards, which were designed to demonstrate the kinds of classroom activities teachers might want to use to help students reach the standards. "We actually led them through the kinds of activities they might do with their kids. It was pretty neat. Although some people don't like inservice days no matter what you do, we got really good feedback on the whole," said Mayhew.

Mayhew also emphasized that involving teachers in the development of the writing assessment helped to increase teachers' knowledge of, and enthusiasm for, the New Directions effort. "We had a number of little windows along the way that helped people begin to understand what we were doing," said Mayhew. Other educational and public relations activities included the following.

- Four local cable television programs describing New Directions were aired. Peg Bradley of Governor Carper's office said the producers of the shows tried to simplify the message so the purpose of New Directions would be clear in everyone's mind. "The message was, 'We want to raise student achievement and help students succeed,'" she said.
- Efforts were made to keep the editorial board of the state's major newspaper, the *Wilmington News Journal*, informed about New Directions. Editorials in favor of the initiative helped increase public understanding, as did a decision by the paper to reprint the draft standards in full in a special section of the Sunday edition.
- To educate parents, the department conducted thirty-minute presentations on New Directions in several school districts, followed by presentations of new teaching practices by local teachers in which the parents played the role of students.

Obstacles to Reform

In undertaking such an extensive effort, mishaps are likely to occur. Mayhew discussed some of the problems the department encountered in trying to distribute copies of the draft standards to every teacher in the state. "The first two sets of standards we sent out to teachers for review were in math and science, and we made the mistake of making the covers of the documents the same color—gold. When people received the first document, they thought they had everything. This created a lot of confusion!" However, many school buildings never received these copies. "We had them delivered to the district offices, which were supposed to deliver them to the buildings. Well, that didn't always happen," explained Mayhew.

Accordingly, the department ensured that the covers of the next two subject-area drafts were different colors. Although these drafts were once again delivered to the district offices, the department wrapped the documents in separate bundles and addressed them to a specific individual at each school. Mayhew explained that this process was more efficient. "The person whose name was on the bundle was responsible for disseminating the copies within the building. That seemed to work a lot better. You need to have a particular person's name on them."

By August 1995, every teacher in Delaware received a set of all four officially adopted standards documents at the request of Superintendent Forgione. To ensure efficient delivery, department of education officials paid the state printing office to deliver the documents by hand to each school building.

Earlene Gillan-Smith, president of the Delaware State Education Association, indicated that state officials had to deal with another, more serious problem surrounding New Directions. She stated, "There has been a lot of confusion about what New Directions is all about. The biggest mistake was that we did not communicate with the individual classroom teachers on an ongoing basis from the very beginning." This confusion was compounded by the fact that other education-related initiatives were occurring simultaneously. Gillan-Smith noted, for example, that business involvement in the reforms led many people to think that New Directions was the GAP analysis, an earlier report by Delaware's business leaders that measured the gap between the skills possessed by high school graduates and those desired by employers. "All of us did a very poor job in the beginning of explaining what this was," she said.

To address the initiative's communications problem, state officials realized that Delaware's time-honored system of district offices sharing information with individual schools and teachers needed to be improved. "We have always expected the district superintendents to disseminate information to the people in the school buildings. Unfortunately, that does not always occur," said Gillan-Smith. Once the problem was recognized, however, the Delaware State Education Association and the department of public instruction not only intensified their communications efforts, but ensured that these efforts were aimed directly at teachers and other school practitioners. Among other outreach efforts, the department began publishing a newsletter on New Directions activities titled *Update*. As evidenced by the Delaware State Education Association's spring 1995 survey, which found that 92 percent of teachers were familiar with New Directions, the holes in the program's communications strategy appear to have been repaired.

Coming Next: New Statewide Assessments

In addition to the content standards, a key component of New Directions is the development of the Comprehensive Assessment System, a statewide assessment system that is aligned with the standards. Assessments currently are being developed by Delaware educators and citizens, in conjunction with a professional assessment development firm and members of the department's assessment branch, and will be submitted for approval by the state board of education in spring 1996. The new assessments, which will consist of performance-based assessments, portfolios, and norm-referenced tests, will be piloted during the 1996-97 school year and phased in

gradually, beginning in 1997-98. The state department of education expects the new Comprehensive Assessment System to be fully implemented by the 1998-99 school year.

While the content standards were being developed from 1992 to 1995, the state suspended its standardized testing program, which relied primarily on multiple-choice tests, and implemented a statewide interim assessment program. Beginning in 1993, interim assessments in reading, writing, and math were administered each May to students in grades three, five, eight, and ten. These performance-based tests require students to demonstrate their abilities through exercises such as writing an essay or finding the answer to a math problem and explaining how it was derived.

The purpose of the interim program was to get students and teachers accustomed to nonstandardized assessments before the Comprehensive Assessment System was fully implemented. In addition, the interim assessments were used to evaluate students' and schools' performance levels in relation to interim standards. Performance was reported in three categories: "meeting or exceeding," "approaching," or "falling considerably below" the relevant standard. The results of the first interim assessments in May 1993 indicated that only 1 percent of students who took the test met or exceeded the interim standards in reading, writing, and mathematics.

The state's use of the interim assessments proved to be problematic. According to Earlene Gillan-Smith, president of the Delaware State Education Association, the department failed to prepare teachers, parents, and students ahead of time for the new testing process. "The teachers were upset and the students were very frustrated because suddenly here was a brand new type of test. The teachers had no idea until the day of the test when they opened that booklet what exactly was going to be on the test. There had been no information sent out ahead of time."

In addition, the interim assessments were measured against vague benchmarks. According to Gillan-Smith, "The test was not really measuring anything; it was an interim, so it was not based against any [commonly agreed upon] standards." In fact, "the interim assessment was in some cases measuring something that teachers hadn't even covered yet." To make matters worse, the department widely publicized each school's interim test scores in 1993. Although the state was trying to meet a legislative requirement to produce individual school profiles and attempting to establish an atmosphere of accountability, the surprise tactic provoked a firestorm among school administrators and parents.

Despite the problems that surfaced in Delaware, Gillan-Smith said she would advise other states developing content standards and assessments to use interim assessments. She does recommend, however, that state officials engage in early and frequent communication with schools, especially as it pertains to material that will be covered in the assessment. Other staff within the department of public instruction concur. In fact, during the 1994-95 school year, the department, having learned from its previous mistakes, informed district superintendents and principals about the spring assessment in January and February, thereby enabling teachers and students to better prepare for the tests.

The department administered the interim assessment for three years. In the spring of 1995, the legislature directed the department to drop the reading and math components of the test, pending development of the final standards-based statewide assessments. Only the writing assessment, which teachers felt was the strongest component, will be given over the next two years.

Professional Development and Capacity Building

Everyone involved in New Directions recognizes the importance of staff development. Teachers in particular have expressed a strong desire to learn new instructional practices that are necessitated by the content standards. In response, the Delaware legislature approved $2.5 million for professional development programs in 1995. "We've done a lot of fighting this year with our legislature, but in the

end we got all the staff development funding that we requested....We are very pleased with what has occurred," said Gillan-Smith.

Helen Foss, project director for the Delaware State Systemic Initiative (SSI), a five-year and $5 billion project of the National Science Foundation, highlighted the work that has been done under SSI to enhance teachers' capacity to understand and implement the new standards. "We are using rich curriculum to help teachers really understand what these new standards are about, and we are providing them with new teaching and learning strategies. The schools that are most ready to go are the schools that have been working with SSI. And these are strategies that other people can use. What we've been doing is building capacity that will go far beyond the schools that we've been working with."

Furthermore, because the department recognizes that some districts will need assistance in building curriculum to support the new standards, they will send several members of the first four curriculum framework commissions to serve as "itinerant teachers" who will assist districts with the implementation of content standards. "Our districts are very small and many do not have the [necessary] expertise," said Superintendent Forgione. "We probably only have one district that has specialists in the four content areas at the central office. So there really is a need for regional, countywide, or state-level kinds of assistance."

According to Gillan-Smith, most teachers and district officials are eager to bring reforms to the classroom. She reported that several districts already have formed committees to begin revising curricula.

The Professional Standards Council, an independent body that reports to the state board of education, has developed a plan to align teachers' standards with the academic content standards. To that end, the council is collaborating with teacher training institutions to revise their programs to match course requirements with the content standards.

Dollars and Cents

The total cost of developing the standards and assessments is estimated at $15.5 million. More than half of this amount is being donated by the state board of education, local school boards, and the Delaware Business Council. Figure 5 outlines the total funds pledged for the five-year New Directions effort.

In 1993, the second year of New Directions, the state legislature authorized an additional $4.50 per child—or $450,000—to enable the state to carry out the interim assessment. Then, in 1994, the Governor and the legislature increased this amount to approximately $20 per child, or $2 million. In June 1995, the legislature approved an additional $250 per student for spending on materials and supplies at the local level. Although this money was not earmarked specifically for New Directions, it came at a time when local districts were eager to use the funds to purchase materials needed to accomplish the new reforms. During years four and five of the New Directions program, the locally derived funding ($500,000 per year) will be used solely at the local level to buy materials and supplies for schools.

In its fiscal 1996 budget, the legislature allocated an additional $250 per certificated staff person to be used for staff development that is aligned with the standards. In 1997 this amount is expected to increase to $330 per certificated staff person.

According to Superintendent Forgione, the majority of the program's budget has been

Figure 5
Total Funds from All Sources for New Directions

Fiscal Year	Funding
1993	$1.7 million
1994	$2.15 million
1995	$3.5 million
1996	$4.9 million
1997	$5.4 million (proposed)

spent on the operating expenses for the four curriculum framework commissions; the printing costs to publish copies of the draft and final standards; and the costs of conducting the interim assessment.

The Standards

Delaware's curriculum frameworks contain the content standards, which state broad, endpoint goals for what students must know and be able to do in various disciplines, as well as performance indicators, "learning events," and "vignettes."

- Performance indicators translate each content standard into goals for kindergarten through tenth grade, articulating specific expectations for students by grade-level cluster.
- A learning event is a brief example of a classroom activity that can help students develop an understanding of a specific concept or skill. The learning events are designed to help teachers interpret the meaning and instructional implications of the standards.
- A vignette is a teacher's real-life description of how she or he carried out a learning event in the classroom. It is intended to serve as an example for other teachers.

The second volume, which accompanies each curriculum framework, includes "classroom performance models." These models consist of five to ten detailed lesson plans that illustrate how individual standards can be translated into instructional activities in the classroom.

In the introduction to the mathematics curriculum framework, the Delaware Mathematics Framework Commission outlines the connections between the Delaware framework and the work of the National Council of Teachers of Mathematics. According to the document, "The Delaware team endorses the work of NCTM, and explicitly agrees with NCTM that:

- all students need to learn more and often different mathematics, and that instruction in mathematics must be significantly revised;
- knowing mathematics is 'doing' mathematics;
- learning should be guided by the search to answer questions—first at an intuitive, empirical level, then by generalizing, and finally by justifying (proving); and
- instruction should be developed from problem situations."

Finally, the introduction notes that the Delaware standards are packaged differently than the NCTM standards "because we feel our format communicates more clearly to the teacher." The ten mathematics content standards are excerpted in Figure 6.

Figure 6
Mathematics Content Standards

Mathematical Processes

Standard 1. Students will engage in **problemsolving** as the core of the entire mathematics program. Problemsolving provides the context in which concepts and skills are introduced and learned; requires the application of a variety of strategies; develops persistence, self-reliance, and confidence; integrates mathematical reasoning, communication, and connections; and emphasizes the process that could lead to a reasonable solution.

Standard 2. Students will develop their ability to **communicate mathematically** by solving problems in which there is a need to obtain information from the real world through reading, listening, and observing; to translate this information into mathematical language and symbols; to process this information mathematically; and to present results in written, oral, and visual formats.

Standard 3. Students will develop their ability to **reason mathematically** by solving problems in which there is a need to investigate significant mathematical ideas in all content areas; to justify their thinking; to reinforce and extend their logical reasoning ability; to reflect on and clarify their own thinking; to ask questions to extend their thinking; and to construct their own learning.

Standard 4. Students will develop their ability to make **mathematical connections** by solving problems in which there is a need to view mathematics as an integrated whole and to integrate mathematics with other disciplines, while allowing the flexibility to approach problems, from within and outside mathematics, in a variety of ways.

Mathematical Knowledge

Standard 5. Students will develop an understanding of **estimation, measurement,** and **computation** by solving problems in which there is a need to measure to a required degree of accuracy by selecting appropriate tools and units; to develop computing strategies and select appropriate methods of calculation from among several methods of calculation from among mental math, paper and pencil, calculators, or computers; to use estimating skills to approximate and answer; and to determine the reasonableness of results.

Standard 6. Students will develop **number sense** by solving problems in which there is a need to represent and model real numbers verbally, physically, and symbolically; to use operations with understanding; to explain the relationships between numbers; to apply the concept of a unit; and to determine the relative magnitude of real numbers.

Standard 7. Students will develop an understanding of **algebra** by solving problems in which there is a need to progress from the concrete to the abstract using physical models, equations, and graphs; to generalize number patterns; and to describe, represent, and analyze relationships among variable quantities.

Standard 8. Students will develop **spatial sense** and an understanding of **geometry** by solving problems in which there is a need to recognize, construct, transform, analyze properties of, and discover relationships between geometric figures.

Standard 9. Students will develop an understanding of **statistics** and **probability** by solving problems in which there is a need to collect, appropriately represent, and interpret data; to make inferences or predictions; to present convincing arguments; and to model mathematical situations to determine the probability of events.

Standard 10. Students will develop an understanding of **patterns, relationships,** and **functions** by solving problems in which there is a need to recognize and extend a variety of patterns; and to analyze, represent, model, and describe real-world functional relationships.

The Graduation Rule in Minnesota

Combining both minimum competency requirements and academically challenging content standards, Minnesota's educational reforms are more complex than those of many other states. Under the results-oriented Graduation Rule, which was approved by the state legislature in 1989 and will take effect for the graduating class of 2000, students must meet or exceed minimum competency requirements in three areas. Although the state originally had identified seven of the minimum competency standards, known as "basic requirements," officials narrowed them to the areas of reading, writing, and math in January 1996. The second component of the Graduation Rule, the profile of learning, includes high-level content standards in ten broad areas of study. Although schools already have begun to implement the profile of learning, students graduating in 2000 will not be held accountable for fulfilling its requirements. The department of children, families, and learning anticipates that the profile will be fully implemented and required for graduation for students graduating in 2004. As of March 1996, basic tests in reading and math have been approved by the state board, and other assessments are being finalized. Local school districts will have the option of either adopting state assessments or writing their own.

A New Approach

Students entering Minnesota high schools in the fall of 1996 will be held to higher graduation standards than their earlier counterparts. Under the current and more traditional system, students are required to complete 20.5 course credits and receive a passing grade (D minus or above) in all classes to earn a high school diploma. Although schools mandate that students take certain courses (i.e., four years of English and three years of social studies), there is little consistency among schools as to what is taught in those classes. In other words, there is little emphasis on what students actually learn. "It's a traditional seat-time rule," said a staff member in the department of children, families, and learning.

The state's traditional system is antithetical to the way Minnesota educators now believe things should be done. "Right now, we require that children sit in class for a certain number of hours and be exposed to a certain kind of content. That's our requirement and our system does that," said Ann Schluter, the department's acting commissioner. "But there is no requirement of the system right now that the child learn the content at a certain level. A D minus child can graduate, and a D minus child in one district is not the same as a D minus child in another district."

In contrast, Minnesota's new graduation standards will require students to demonstrate that they have mastered certain skills and have acquired sufficient knowledge about specific

subjects. In doing so, the standards also will provide a system of accountability for parents, school districts, and the state, as well as allow for greater consistency across school districts. According to a state department of children, families, and learning document, the new standards will be "well-defined and specific so that students and teachers know exactly what students must accomplish. It is the state's responsibility to provide uniform education opportunities for all Minnesota students. The new standards do this by establishing learning requirements that are consistent for all Minnesota students."

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Schluter, reflecting the concerns of many educators and parents, said, "I certainly would hope to see the system more cognizant of what it needs to do for the child. It doesn't matter how long students sit in class; they have to know and be able to do things with what we have presented to them. If we test children early and find they are beginning to fall through the cracks, then we have to ask, 'Do we need to do something different for this child?' Before, we've just let the child go along and he or she either makes it or doesn't make it."

Legislative Impetus

In 1989 the Minnesota legislature enacted legislation that directed the state department of education to adopt the statewide, results-oriented Graduation Rule. This legislative activity effectively provided the impetus for systemic education reform in Minnesota. The law contains the following key provisions.

- Implementation of the new Graduation Rule will start with students beginning the ninth grade in the 1996-97 school year (i.e., those graduating in 2000).
- The board of education may not prescribe the delivery system, form of instruction, or a single statewide form of assessment that local sites must use to meet the requirements contained in the rule.
- The content of the Graduation Rule must differentiate between minimum competencies and rigorous standards.
- Assessments to measure the knowledge required by all students for graduation must be developed according to the most current version of professional standards for educational testing.
- The state board of education must periodically review and report on the assessment process and student achievement with the expectation of raising the standards and expanding the high school graduation requirements.
- When fully implemented, the requirements for high school graduation in Minnesota, including both basic requirements and the required profile of learning, must include a broad range of academic experience and accomplishment necessary to achieve the goal of preparing students to function effectively as purposeful thinkers, effective communicators, self-directed learners, productive group participants, and responsible citizens.

Widespread Support

Minnesota's standards reform movement maintains solid backing from three critical constituencies: the state's business community, parents, and teachers. In a 1994 survey of more than 300 Minnesota employers conducted by the Minnesota Business Partnership, 89 percent of the respondents supported requiring high school graduates to meet a set of basic standards, and 81 percent said they would be much more likely to hire applicants who have met those standards. "The business community was the voice for this initiative," said Acting Commissioner Ann Schluter. "There was a general feeling that too many children are not succeeding in the current system. The business community gave voice to that."

Public opinion polls also reflect strong support among Minnesota parents for rigorous, competency-based high school graduation requirements. A 1994 survey of 1,000 Minnesota households with children enrolled in public schools found that 88 percent of these parents supported competency testing, especially in the areas of reading, writing, and mathematics.

Among the parents and guardians who were familiar with current graduation requirements, 51 percent indicated that the current rules did not sufficiently challenge students. Moreover, 68 percent of the parents and guardians familiar with the new graduation standards proposal favored it and only 7 percent opposed it. At least 70 percent of the respondents supported withholding students' high school diplomas if they fail to demonstrate proficiency in reading, writing, and mathematics.

According to Schluter, Minnesota teachers support the proposed graduation standards. She noted that teachers are particularly excited about the prospect of uniform standards throughout the state.

Combining Minimum Competencies with High Standards

Several states that impose graduation requirements recognize minimum competencies and higher level skills by awarding two separate diplomas: one demonstrating that a student has met the minimum competency standards and the other indicating that a student has attained a high level of mastery in his or her course work. In such systems, the mastery diploma is considered as an addendum to the minimum required learning level.

The Minnesota Department of Education does not subscribe to this approach. It believes that instead of treating challenging standards as an addendum to a minimum competency-based curriculum, Minnesota's schools should incorporate rigorous standards into the state's core curricula and improve instruction to achieve the high expectations embodied in the profile of learning. The department is confident that this approach will enable students to fulfill the state's basic academic requirements as a natural consequence of pursuing a rigorous course of study and ensure that high school diplomas certify that a student has achieved both minimum competencies and high-level skills.

"We don't look at the basic requirements as a foundation on top of which you add the rest," said Cheryll Ostrom, a standards specialist in the state department of education. "Rather, the basic requirements are a core in the profile of learning. All of the instruction and curriculum will be geared toward the high standards, and in the process the kids will get the basic requirements." According to Ostrom, Minnesota will escape "dumbing-down" the curriculum to minimum competency levels.

Under the new Graduation Rule, Minnesota students must demonstrate academic proficiency in both basic and high-level skills. To do this, they must pass basic skills tests in three core subject areas—reading, writing, and mathematics. These assessments, which Minnesota officials claim will take the form of traditional multiple-choice tests, will measure students' mastery of the basic requirements. The basic skills tests are considered the "high-stakes" portion of the Graduation Rule.

In addition, students must complete a course of study outlined in the profile of learning that helps them develop their higher level processes and skills, such as speaking and writing effectively, becoming better problem-solvers, and enhancing their research skills. A seventy-one page draft of the profile of learning, submitted in June 1995, identifies the sixty-four content standards grouped into ten broad categories, or "elements," that students must work toward. These elements include artistic expression; complex reading skills; complex writing skills; speaking and listening; advanced mathematics; social studies/history; advanced science; problemsolving; inquiry; and use of resources. To ensure a well-rounded education, students must demonstrate work in each of the ten broad elements in order to graduate. As they begin to train schools to implement the standards and evaluate their delivery, department of education officials are considering which level of performance they will hold students accountable to within each of the ten broad categories outlined in the profile of learning. Minnesota also offers an optional area of learning in a language other than English.

These high-level standards will be measured through performance assessments, which will require students to apply their knowledge to real-life situations. Profile of learning

assessments may take the form of quizzes, projects, and essay tests. Although their performance assessments will be judged against rigorous standards, students will not be required to demonstrate high-level competencies to graduate. Instead, they merely will be required to pass. According to Michael Tillmann, the education department's director of standards, the performance assessments are not high-stake tests in part because performance assessments are not sufficiently reliable as indicators of student achievement.

"We are setting the profile of learning standards at a very high level so that they will challenge all students," said Tillmann. "Every student won't achieve the high standard in all—or perhaps in any—of the standards. What they need to do is complete a record of work tied to the profile of learning standards that will be scored consistently across the state against the high standard. There is a rubric set up for each of the standards that determines what constitutes having completed the package of assessments."

Collectively, these requirements will guarantee that all high school graduates attain the skills needed to function properly in the adult world, while allowing students the opportunity to work extensively in areas in which they have a special interest or talent.

In addition to the content standards linked to graduation, the profile of learning also includes content standards for grades three, five, and eight. These grade-level standards serve as benchmarks for the high-level graduation standards. There are twenty-eight standards for grade eight, fifteen for grade five, and eleven for grade three.

Challenges Faced by Schools

Although the profile of learning sets sixty-four content standards, the department of education does not expect high schools to cover all of these standards in their list of course offerings. Therefore, in many schools, students will be limited in their choice of course offerings and will find it difficult to fashion a course of study that will accommodate the state graduation requirements.

"A school system is going to have some choice about which content standards it wants to offer," said Cheryll Ostrom, noting that the department has yet to decide how many content standards a school must provide. "For example, I think there are eight social studies content standards in one element. We would never expect a school district to offer all eight. So a system might decide to offer four of the eight, or six of the eight, and then the students will get to choose from those."

Ostrom added that some of the state's smaller school systems are considering ways to increase their course offerings by combining subjects and skills in nontraditional ways. "Some school districts are saying, 'Let's offer a senior seminar class where the kids will be able to do their inquiry standard and a history standard and a multiple perspectives standard [at the same time].'"

In an effort to ensure that schools provide adequate opportunity for students to fulfill the requirements included in the profile of learning, the Minnesota Department of Education has adopted a piecemeal and careful approach toward their implementation (see Figure 7). The board of education will approve inquiry standards in 1996 and will approve math,

Figure 7
Implementation Schedule for Minnesota's Graduation Standards

- Graduating class of 2000 (entering ninth grade in 1996): To earn a diploma, these students must achieve basic requirements in reading and math.
- Graduating class of 2001 (entering ninth grade in 1997): To earn a diploma, these students must achieve the basic requirements in reading, math, and writing.
- Graduating classes of 2002 and beyond (entering ninth grade in 1998 and all following years): To earn a diploma, these students must achieve the basic requirements in reading, math, and writing. Beginning with this class, students also will have to present a record of work that demonstrates achievement toward the high standards spelled out in the profile of learning.*

*The Minnesota Department of Education has not yet established a more detailed implementation schedule for the profile of learning.

science, and decisionmaking standards in 1997. Although schools are required to begin implementing the profile of learning, students graduating in the year 2000 will not be held accountable for demonstrating proficiency in the profile's required content areas. According to Michael Tillmann, director of standards in the department of education, the state believes it is its systemic responsibility to ensure that schools are held accountable for implementing the reforms before students are accountable for demonstrating proficiency.

Local Autonomy

Minnesota's new system effectively merges state control over graduation requirements with local control over implementation. As provided in the legislation, individual schools will be free to shape curriculum and instructional practices in ways they believe will best help their students meet the state graduation standards. "How the schools implement the standards and how they choose to place the standards in courses or in programs is totally a local choice," said Tillmann. "Autonomy ought to be on the Minnesota state flag."

School districts also are free to develop their own assessments for the basic requirements and the profile of learning standards. Although the state will publish basic skills tests, schools are not required to use them. "Schools may either develop their own tests or use commercially available, nationally normed tests," explained Tillmann.

Nevertheless, the state department of education has reserved control over setting the basic requirements and the standards included in the profile of learning. Although districts are free to design original assessments for the basic requirements and the profile of learning standards, they must adhere to detailed state specifications in developing such assessments, and any locally designed or commercially acquired test must be approved by the state. According to Tillmann, "There is a process in the rule we are developing for schools to validate that the score they expect on those alternative tests matches the difficulty of the basic requirement tests."

Under this arrangement, localities maintain complete autonomy only in the areas of curriculum and instruction. However, the curriculum still must be geared toward enabling students to fulfill the basic requirements and the profile of learning. "While the standards don't dictate curriculum, they certainly drive it," said Tillmann. "Right now we don't have any statewide curriculum, so what's offered in English class, for example, could be nearly anything. In these standards, we are clearly articulating in terms of skills and processes [what has to be taught]."

Department officials perceive many advantages to the new system. First, it holds students and schools across the state to uniform and challenging standards, thereby ensuring that what students learn in one school is substantially similar to that which their cohorts are learning in another. Second, it allows Minnesota policymakers to accurately measure the performance of schools and students. Third, it informs taxpayers about how their money is being spent on education.

Tillmann also noted that the content standards in the profile of learning do not strictly correspond to specific disciplines. Rather, they are designed to encourage more interdisciplinary learning and to ensure that students receive a well-rounded education that prepares them for adult life. "No particular discipline or department necessarily owns any of the standards. For example, the writing standard could be achieved in a place other than English class, assuming that the other department holds to the same high standard of quality that an English department would. So the profile allows for more interdisciplinary learning and more connections in course work than schools have traditionally offered within the current structure," he explained.

Tillmann added, "The new system is very focused. Right now, we require four years of English and three years of social studies much like most states. However, once students have those required classes out of the way, what they take as electives is up for grabs; it's just a pile of everything else to pick from. Under the new system, we very clearly grouped processes

and skills so that we are certain that even the electives students take represent what the state believes to be critical areas of background."

Tillmann dismissed charges that the minimum competency test, which is the primary component of the Graduation Rule, will inevitably lower student achievement levels. "Our schools tell us quite consistently that all you have to do now to graduate from high school is get D minuses in 20.5 credits. And yet almost nobody does that. We've got kids getting As and Bs. Kids have always done more than they have to. The difference is that now they will know what it will take to be an A student or to be a B student. Actually, that ought to motivate them better," he said.

Legal Implications

Because of the high stakes associated with the basic requirements portion of the Graduation Rule (i.e., if students do not pass the basic requirement tests, they will not graduate), the Minnesota Department of Education had to ensure that the skills and knowledge required by the minimum competency test were absolutely necessary for adequate functioning in the adult world.

How did the department decide which skills and bodies of knowledge were needed in the adult working world? The department consulted the U.S. secretary of labor's Commission on Achieving Necessary Skills. The commission's 1990 and 1992 reports identified five workplace competencies and a three-part foundation of skills and personal qualities that young people need to succeed in the workplace. In addition, the department reviewed minimum competency tests used by other states; the admission requirements and academic expectations of community colleges; and the skill requirements of employers for entry-level jobs.

"You can't just set an arbitrary requirement," said Tillmann. "We tried to find the place where, if you couldn't perform at that level—for example, in reading—the hope of your being successful as an entry-level adult would be minimal at best. We tried to find out what students really have to have, despite the fact of course that we want them all to have as much as they can."

To be fair about holding students accountable for meeting academic standards, the department also considered how schools would be able to demonstrate that they taught the material needed to pass the basic requirements test. According to Tillmann, "We can't hold students accountable for what they haven't learned." Department officials referred to a 1984 Florida lawsuit, *Debra P. v. Turlington*, in which a group of high school students challenged the constitutionality of the state's competency exam required for graduation. In this case, the court ruled that the state of Florida and school districts throughout the state have a duty to teach the skills needed to pass the graduation exam. The court also ruled that educators must clearly document when and how often students have had the opportunity to learn the required skills.

To ensure that all students had the opportunity to learn the material required for the graduation tests, the department considered whether the proposed Graduation Rule provided for equitable access to learning for all students, especially those with special needs and those with limited English proficiency. According to the department's legal consultant, the state is primarily responsible for documenting that students have had an adequate opportunity to learn the material covered on the state-developed basic skills tests, while local districts are responsible for ensuring that students have received instruction in the skills required by the locally developed profile of learning assessments.

Tillmann noted that the department examined the appropriateness of required skills, identified ways of ensuring that schools will provide students with the instruction needed to pass the graduation assessment, and sought to guarantee opportunities to learn for all students. The department addressed these potential obstacles not only to avoid legal disputes but, more importantly, to avoid shortchanging children.

Writing the Standards

Minnesota adopted an intricate process for writing its basic requirements and high-level content standards. Initially, the state department of education sponsored a series of town meetings across the state to give parents, teachers, and other community members an opportunity to identify what they believed students should know when they graduate from high school. These meetings, several of which were held in each congressional district, produced approximately 160 statements describing what students should learn in school. Eventually, these statements were condensed into five "comprehensive goals," which guided the development of Minnesota's set of basic requirements and the ten elements included in the profile of learning.

The process of writing the high-level content standards, known as the profile of learning, began in January 1994. A group of teachers, chosen from pilot sites and representing professional organizations across the state, met periodically in St. Paul for the next six months to hammer out content standards in each of fifteen broad areas, or "elements." (These fifteen elements, under which the content standards in the profile of learning are organized, were later reduced to ten.)

During the first two months of the process, teachers met by content area to write descriptions of the knowledge and skills required by the elements in their discipline. Teachers were encouraged to write "big overarching statements" concerning required learning for as many elements as necessary to cover their discipline. There were, however, two stipulations: the required knowledge and skills had to represent the heart of their discipline, and the discipline had to accept responsibility for instruction and assessment associated with the required learning. During this preliminary stage, teachers wrote 141 statements, which were reviewed by a group of people representing postsecondary education, business, and community interests.

During the second stage, lasting from April to May 1994, the teachers used the statements written during the January and February meetings to construct detailed content standards. Statements were collapsed and combined to create more robust groupings of expectations. Each statement became the first, summary sentence of an individual content standard. Altogether, the process resulted in sixty content standards. (Four more were added later, bringing to sixty-four the total number of standards included in the most recent draft of the profile of learning.)

Standards specialist Cheryll Ostrom described the process as exhaustive. She noted that it "felt like it took forever. We spent about three days with each content area writing the standards. On the first day, we explained to the teachers in each content area what it was all about, and they wrote the overarching statements. After we finished the whole round, everybody came together to see what everybody else had done. We published copies of all the statements in all the content areas so that the math people could see what the technology people had done, and the technology people could see what the science people had done, etc. Then we brought people in each discipline back in for two days each to really flesh out their statements into procedural and declarative knowledge."

In July 1994, a team of administrators and curriculum specialists from throughout the state met to review the standards and draft a proposal for graduation requirements based on the profile of learning. The committee recommended merging two physical education standards into one and adding additional standards in certain areas.

To solicit feedback, the department issued the first draft of the profile of learning and accompanying graduation requirements for public review. Department of education officials requested feedback from school districts throughout the state, from representatives of the state's educational organizations, and from the general public. Local citizens also were afforded the opportunity to review the draft in a second series of town meetings. Other avenues for publicizing the proposal included a monthly newsletter, which continues to be

published by the department, and coverage by various local newspapers.

Based on the comments received, the department issued second and third drafts in January and June 1995, respectively. "In eighteen months we've written the content standards and revised them twice," said Ostrom. "We have some pretty ragged teachers [who have] worked terribly hard."

Assessments First, Curriculum Second

States interested in implementing standards-based reforms often have difficulty with the sequence of events. Should standards come first, followed by curricular changes and new assessments aligned with the standards? Or, should new assessments be the starting point that leads to changes in the curriculum?

Faced with such concerns, Minnesota opted to write the content standards and the specifications for assessments simultaneously and to develop the curriculum subsequent to these structures. "Traditionally, schools and states have written curriculum, and then they write instructional methodology, and then they get around to assessments," explained Tillmann. "Our whole process has been designed on [the] assumption that you first articulate what you want students to be able to do and then determine how you will know when they know it. So you build the assessment second. Then you build curriculum, which in all its richness subsumes those standards and assessments, so that in fact the curriculum leads to the standards and assessments. We would argue that you can't build the curriculum to lead to either the high or the basic requirement assessment if you don't know what the assessments look like."

While the Minnesota Department of Education engaged in a strenuous process of reviewing and revising the content standards and proposed graduation requirements during the summer and fall of 1994, groups of teachers working in fourteen pilot sites across the state began the process of writing test specifications for the basic requirements and assessment packages. These test specifications included performance assessments drawn from the sixty-four standards outlined in the profile of learning. Basic tests in reading and math were administered to students in twenty-four pilot sites during the 1995-96 school year. Once finalized, the basic tests and the various assessment packages will serve as models for other schools. Schools that do not adopt the state-developed assessments will have to create their own alternative set of assessments. Ostrom indicated that the department ultimately would like several assessment models for each content standard to emerge, giving schools and districts a wide range of models from which to choose.

Spreading the Word

The Minnesota Department of Education took a number of steps to ensure that school-level practitioners were well informed and advised of the changes taking place at the state level. As part of the Minnesota Educational Effectiveness Program (MEEP), the department sought to decentralize authority to local schools while establishing a network through which schools could collaborate to work on continuous improvement. The department assigned a coordinator to each of the state's eleven regions, whose responsibilities entailed providing training and disseminating information to teachers and staff in local schools. In addition, the department allocated an assessment trainer to each of the twenty-four pilot sites experimenting with the draft assessments. Working with staff in the pilot sites, the assessment trainer helped facilitate the implementation of the assessments.

The department also has sponsored monthly meetings with superintendents to discuss the new standards and has issued numerous reports describing developments in the reform movement. For example, during the summer of 1995, the department of education kicked off the "Principals' Academy"—a workshop in which groups of principals came together to discuss implementation issues. Academy meetings are conducted by 150 elementary and secondary school principals who are trained by the department.

As part of MEEP, the department is also working with school districts to help them self-assess their schools and make informed decisions about improving student achievement. By receiving copies of the test specifications for the basic requirements and the profile of learning standards that emerged from the pilot sites, teachers throughout the state are kept informed of the assessment process.

Funding

The development and implementation of the new graduation standards is being funded by legislative appropriations that total $18 million. Initial funding was allocated in 1993, when the Minnesota legislature appropriated $10 million for the reform efforts; this money was intended to finance activities through 1995. An additional $8 million was awarded in 1995 to fund the program through 1997.

These funds have been used to cover the costs of developing the basic requirements and the profile of learning. The initial allocation also included funding for a commission, which estimated the cost of implementing the new requirements statewide.

The Standards

To date, Minnesota is one of the few states that has made the distribution of assessment specifications an integral part of its standards reform. Minnesota's teachers have received copies of the content standards defining what every Minnesota student should learn in school and a set of specifications that suggest how to assess student achievement toward the standards.

The state chose to do this for two reasons. First, as noted by department of education director of standards Michael Tillmann, Minnesota's education leaders believe that the new assessments should come before curriculum changes so that they can guide changes in curriculum and instruction. Second, because Minnesota will require students to meet both the basic requirements as well as the profile of learning before graduating, and because the only way to judge whether a student has done so is to assess him or her, Minnesota schools must be prepared to implement the new standards and associated assessments simultaneously. Figure 8 lists the requirements and choices within the profile of learning. Figure 9 presents the sample procedures and specifications for one standard.

Figure 8

Requirements and Choices Within the Profile of Learning

To graduate, a Minnesota high school student must complete a record of work tied to the profile of learning standards, creating their course of study from the following options and requirements. The standards referred to are described in detail in the eighty-two page profile of learning.

Element One: Comprehending, interpreting, and evaluating information received in the English language through reading, listening, and viewing the language.

Reading complex information (standard 1.3.1)

Scientific reading (standard 1.2.1)
Interpreting perspectives (standard 1.3.2)
Analysis of evidence (standard 1.4.1)
Technical reading (standard 1.12.1)

Element Two: Writing and speaking in the English language for academic and technical purposes with a variety of audiences.

Academic writing (standard 2.3.1)
Technical writing (standard 2.3.2)

Speaking in/to groups (standard 2.3.3)
Public speaking/parliamentary law (standard 2.5.1)
Business presentations (standard 2.7.1)
Interpersonal communications (standard 2.10.1)

Element 3: Understanding the processes and meaning of artistic expression.

Performance (standard 3.3.1; 3.6.1)
Interpretation/Criticism (standard 3.3.2; 3.6.2)
Development of the Arts (standard 3.3.3; 3.6.3)
Graphic Communication (standard 3.3.4)
Music Composition (standard 3.6.4)

Element 4: Applying mathematical concepts to solve problems.

Patterns and Algebraic Functions (standard 4.1.1)
Patterns and Discrete Functions (standards 4.1.2)

Mathematics of Shape and Space (standard 4.1.3)
Technical Applications (standard 4.12.1)

Chance and Data Handling (standard 4.1.4)
Precision Measurement (standard 4.12.2)

Element 5: Applying methods of inquiry needed to conduct research, draw conclusions, and communicate and apply findings.

Research Process (standard 5.3.1)

Scientific Investigation (standard 5.2.1)
Applied Scientific Methods (standard 5.5.1)

(any standard not chosen above)
Mathematics Research (standard 5.1.1)
Social Science Processes (standard 5.4.1)
Constructing a Business Plan (standard 5.5.2)
Market Research (standard 5.7.2)
Case Study Research (standard 5.10.1)
New Product Development (standard 5.12.1)

Figure 8 (continued)

Element 6: Understanding and applying scientific concepts in natural and human-made environments.

Biological Systems (standard 6.2.1)
Chemical Properties and Structures (standard 6.2.2)
Earth Systems (standard 6.2.3)
Laws of the Physical World (standard 6.2.4)
Environmental Studies (standard 6.2.5)
Applied Technology Systems (standard 6.12.1)

Element 7: Understanding how principles of interaction and interdependence operate in societies and cultures.

(must be both United States and international perspectives)
History of Science (standard 7.2.1)
History through Culture (standard 7.3.1)
Themes of U.S. History (standard 7.4.1)
Themes/Patterns of Cultures (standard 7.4.2)
U.S. Citizenship (standard 7.4.3)
Development/Interaction of Cultures (standard 7.4.4)
Recording of Historical Events (standard 7.4.5)
Issues Analysis (standard 7.4.6)
Perspectives of Controversy (standard 7.4.7)
Individual and Group Identity (standard 7.4.8)
Community Service (standard 7.8.2)

Element 8: Applying informed decisionmaking processes to promote personal growth and the well-being of society.

Physical Fitness (standard 8.11.1)

Science of the Human Body (standard 8.2.1)
Community Care Services (standard 8.8.1)
Family Health Care (standard 8.8.2)
Nutrition (standard 8.10.1)

Career Investigation (standard 8.7.1)
Occupational Experience (standard 8.9.1)

Element 9: Understanding the effective management of resources in a household, business, and government.

Economic Systems and Issues (standard 9.4.1)
Natural/Managed Systems (standard 9.5.1)
Personal Financial Management (standard 9.7.1)
Business Principles/Strategies (standard 9.7.2
Accounting (standard 9.7.3)
Family Resource Management (standard 9.10.1)

Optional (to be required at a date to be determined)

Element 10: Communicating in a language other than English.

Symbol System of Drafting (standard 10.12.1)

Communicating in a World Language (standard 10.13.1)

Communicating in a World Language in a Work Setting (standard 10.13.2)

Figure 9

Sample Procedures and Specifications for One Standard

Element Two: Standard 2.3.2—Writes for a variety of technical/business purposes, situations, and audiences.

Procedural

1. Identifies and analyzes the writing situation, including:
   a. how much technical knowledge the audience has; and
   b. where and how the information will be used.
2. Uses style/format and conventions appropriate to the writing situation, such as:
   a. consistent and appropriate to knowledge of readers;
   b. concise and efficient explanations;
   c. consistent and appropriate use of technical vocabulary;
   d. appropriate organization and structure, such as accurate chronology or bulleted steps with one step per bullet;
   e. appropriate use of detailed examples or illustrations;
   f. consistent format and style, including graphic aids and page layouts; and
   g. consistent use of imperative or neutral voice, including warnings and cautions to help reader prevent problems.
3. Writes to accomplish the following purposes:
   a. describe complex processes or procedures;
   b. describe complex devices, including specific actions, orientations, and assembly of parts; and
   c. communicate with technical/business personnel.

Specifications

1. Technical writing must include at least one complex project and work in all three of the following categories:
   a. directions and procedures, such as handbooks, operating procedures, troubleshooting procedures, procedures for assembly, organizational procedures, and procedural job descriptions;
   b. reports and proposals, such as laboratory reports, investigative reports, analytical reports, proposals and recommendations reports, feasibility studies, site visit reports, progress and activity reports, and executive summaries; and
   c. correspondence, such as letters, memos, electronic correspondence, minutes of meeting, original forms, and news releases.
2. Whenever possible, the writing product should be evaluated by a knowledgeable person from a real-world technical or business setting.

Curriculum Frameworks in South Carolina

Under the direction of South Carolina's state superintendent of education, writing teams have been working since January 1992 to draft "curriculum frameworks" in eight subject areas. Among other components, the frameworks include rigorous standards for what students should know and be able to do in kindergarten through grade twelve. Although school districts are not required to adopt the frameworks, the South Carolina Department of Education is pursuing policy and program changes intended to support the learning standards set forth in each curriculum framework. Curriculum frameworks in math, visual/performing arts, and foreign languages were adopted by the state board of education in November 1993, and frameworks in English language arts were adopted in February 1996. The curriculum frameworks in science currently are under revision, and the health/safety, social studies, and physical education frameworks are in the preliminary stages of development.

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The Vision

The movement to adopt high academic content and performance standards in South Carolina originated in 1991, when Barbara Stock Nielsen was elected South Carolina's state superintendent of education. At that time, the state's education system was operating under reforms that were implemented in the 1970s, when the department of education instituted minimum competency levels for students in kindergarten through grade twelve. These reforms focused on improving students' basic skills and ensuring that student achievement reached minimum levels. As Pamela Pritchett, a senior executive assistant in the department's division of education initiatives, noted, "It was the right thing at the right time for us," because students produced steady academic gains following the adoption of the minimum competency requirements.

By the early 1990s, many educators, parents, and business leaders felt that South Carolina students were ready for greater challenges. When Nielsen took office, she immediately moved to raise academic standards and shift the schools' focus to high-level skills. As Dennis Bartels, a staff member in the department of education during that time, noted, "She decided that her legacy was going to be to put the focus back in the classroom and aggressively pursue a much 'higher octane' curriculum." To facilitate this shift, Nielsen launched a multiyear effort to develop and adopt statewide curriculum frameworks—documents that communicate the core academic knowledge and skills all students are expected to learn.

Curriculum Frameworks: A Flexible Approach

As of March 1996, the state was more than halfway toward its goal of establishing curriculum frameworks in eight subject areas. The state board of education adopted frameworks in mathematics, foreign languages, and visual/performing arts in November 1993 and adopted frameworks in English language arts in February 1996. A draft framework in science, which is expected to go to the state board for approval in summer 1996, currently is undergoing revision following public comment. In addition, teams of educators are developing frameworks in health/safety, social studies, and physical education. According to Andrea Keim, an education associate in the state department of education, a draft of the health/safety frameworks is expected in June 1996, and drafts of the social studies and physical education frameworks are expected in spring 1997.

The completed frameworks, published as large paperback books and distributed to every teacher in the state, include academic content standards; a discussion of how students learn the relevant subject and various ways to teach it; sample kindergarten through grade twelve curriculum units; strategies for translating the curriculum frameworks into classroom practices; and guidelines for the adoption of instructional materials. They do not provide teachers with curricula needed to guide classroom instruction. Instead, the frameworks provide educators with broad curricular themes, topics, and objectives in multiyear blocks.

The South Carolina Department of Education views the frameworks not only as a means of articulating what students should learn in school, but also as an important set of policy documents that describe how other parts of the state's education system must change to ensure that students achieve the standards. As policy documents, the frameworks are intended to guide state, district, and school officials as they develop and improve curricula; adopt appropriate instructional materials; properly train teachers and administrators; establish certification and licensure requirements; promote high-quality professional development programs for teachers, administrators, and school board members; and develop effective assessments for evaluating student learning.

Pamela Pritchett explained that South Carolina's approach to standards differs significantly from that of other states. "We have done it a little differently from the first two or three states that started down this path," she said. "We decided that we shouldn't put standards out there unless we also talked about how the system is going to have to change to support the standards. You can't just put out a set of standards and say to the districts, 'Okay, go implement these based on the model you are using right now.' It won't work." In accordance with this view, departmental publications note that "the curriculum frameworks, once approved by the state board, will serve as a directive to the South Carolina Department of Education to pursue policy and program changes advocated in each framework."

Signaling another departure from other states, the department has made the adoption of the curriculum frameworks optional for school districts. Districts are free to ignore the frameworks and will not face sanctions for doing so.

Pritchett clarified the rationale behind South Carolina's noninterfering approach, noting that the

> ... state certainly has a stake in providing education. But it is our philosophical belief that the details of that education should be determined community by community. And also, we operate from the principle that state policy should be supportive, not prescriptive. Then there is the further rationale that, historically in this country, we have found that mandating change in education does not necessarily mean improvement of education. So not only do we philosophically disagree with that approach, but we think the evidence shows that it does not work. People have to be brought along, and the system has to change to support them.

However, as many observers in the state have indicated, the flexible system is not without its

complications. Because the state education department plans to change policies regarding instructional materials, teacher credential requirements, school quality standards, student testing, and other basic elements of the system, any district hoping to steer clear of the curriculum frameworks and their content standards will almost certainly find itself paddling against a very strong current.

"It is true that the district does not even have to use the frameworks," said South Carolina Curriculum Review Panel Chair Kay Creamer. "What the department says is that the district is allowed its own interpretation and use of the documents. At the same time, however, the state department is changing things to cause school districts to use the documents." Creamer, also an eighth-grade math teacher in Chester, South Carolina, added, "To me, that is fair, because I think districts ought to use the frameworks. I think they are good. I guess if you didn't think they were good, you would feel that this all was very unfair, and that the state department was again telling you what to do."

Of course, the department trusts that most districts will recognize the potential benefits to be gained from embracing the curriculum frameworks. Department of education staff member Dennis Bartels contends that the future of the curriculum frameworks will depend on their inherent quality. "Throughout the process there has been a real focus on quality. If the curriculum frameworks are done well, because of the caliber of the people who have written them, they will sell themselves."

In another significant break from past practice, South Carolina agreed not to issue state requirements detailing the changes that districts need to make to meet the standards. Those districts that choose to participate will have to decide for themselves how to adapt their instructional programs and organizational systems to the curriculum frameworks. According to a department publication, "As they are held ultimately responsible, it seems right to provide [schools and districts] the professional flexibility needed to meet academic standards."

Pritchett noted that the notion of implementing such large-scale changes on their own initially caused some district administrators to be a bit nervous. "At the very first meeting when we introduced the first three frameworks to our curriculum people from across the state, they said, 'But where is the manual telling us what to do?' And we said, 'We are not going to give you that manual, because if we do, it will become the only model for change, and we want you to develop your own models based on the needs of your individual communities.' We have resisted the temptation to give in to the cry for specific, step-by-step guidance."

Pritchett characterized the department's new way of relating to the districts as a change from "the paternalistic model that says, 'This is the way you will do it,'" to a more supportive one that says, "'Let us help you figure out what is best for you.'" She added, "It has been very hard for everybody .... People are relearning behavior."

Expected Changes Resulting from the Curriculum Frameworks

The South Carolina Department of Education anticipates that the following kinds of developments will occur as the frameworks are implemented:

- More conversations among teachers, principals, and instructional support staff regarding teaching and learning.
- Increased availability of higher quality instructional materials that require students to think and apply what they know.
- Use of varied types of student assessments—developed locally and statewide—that are aligned with the higher learning standards.
- Use of a wider variety of instructional approaches and less reliance on the dominant lecture styles of teaching.
- Fewer state regulations prescribing school organization and management procedures.
- Expanded professional development opportunities that concentrate on a variety of ways to achieve higher learning standards.

such as those in the National Council of Teachers of Mathematics standards.

- More opportunities for teachers to work together and share their classroom expertise with colleagues.
- Teachers able and willing to make more on-the-spot decisions about what to teach and how to teach it.
- Teachers acting more as coaches and mentors of students rather than as dispensers of facts.
- Students asking more questions, doing more investigations and writing, and generating their own results. Students performing longer duration tasks that may have many "right" approaches to an answer, and learning basic skills within the context of more meaningful and real-life kinds of tasks.

The South Carolina Curriculum Congress

Because there is no law in South Carolina calling for curriculum frameworks, the decision to implement them was made unilaterally by the South Carolina Department of Education. However, as the department moved forward with this development (e.g., deciding which components the frameworks would contain, which subjects they would cover, and how they would be developed), it received substantial feedback from the South Carolina Curriculum Congress. This self-formed and independent body was created in 1991 to provide input from various segments of the community into the curriculum framework development effort. Its original members consisted of 1,500 teachers, school administrators, parents, businesspeople, and community leaders. "Anybody and everybody who was interested in helping improve education in South Carolina" could join, said Pritchett.

The department welcomed comments and suggestions from the congress and acted on many of its recommendations. As one department staff member described it, the congress and the department worked "in tandem" as they conceptualized and refined both the curriculum framework idea and the process of developing the frameworks. For example, the department asked the congress to decide which frameworks should be written first. Based on its perception that the greatest degree of consensus already existed in these three areas, the congress chose math, foreign languages, and visual/performing arts. In addition, the congress advised the department not to incorporate health and physical education into one framework. The congress also advised the department to include a section in the frameworks that outlined what colleges and universities should do in order to support each framework in their preservice and professional development programs.

The South Carolina Curriculum Congress also proved instrumental in broadening the department's vision during the curriculum development process. "The congress took the view that it wasn't just a matter of setting standards or outlining content area expectations for what students should know and be able to do, but that we had to look at the whole system. [It] talked about educational materials, assessments, professional development for teachers and administrators—about reinventing the whole system," said Pritchett.

With the bulk of the curriculum framework completed, the role of the congress gradually has diminished. Department of education staff member Andrea Keim explained that the department is increasingly relying on professional and content organizations, administrators, teachers, business leaders, parents, and students to guide the department in its reform efforts and has phased out funding for the congress by shifting money toward development and dissemination. As a result, the congress had no budget in 1996.

Developing the Curriculum Frameworks

Faced with the daunting task of writing curriculum frameworks in eight areas, South Carolina adopted a clustered approach to development. The first set of frameworks, which covered mathematics, visual/performing arts, and foreign languages, were adopted by the state board of education in November 1993 after twenty-two months of negotiation. The second set of frameworks, which outline

standards in English language arts, science, and health/safety, are in different stages of the adoption process. The English language arts and science frameworks have undergone public review and are being revised for final approval during the summer of 1996. Drafts of the health and safety frameworks are expected to be released in draft form during the spring of 1997. Writing teams recently have started to develop the last two frameworks for social studies and physical education.

The process for developing the frameworks includes the following major steps.

- Based on nominations provided by professional associations representing teachers and curriculum experts, the state superintendent of education appoints a curriculum framework writing team to draft a curriculum framework in an assigned subject area. The writing teams consist of ten to twenty individuals, all of whom have taught, lectured, written, or practiced in their respective disciplines and are knowledgeable in the most current thinking on learning and teaching in their curriculum field. Staff from the state department of education provide support for each writing team, taking care of meeting logistics and information gathering. In addition, each of the writing teams is assisted by a professional writer who helps draft the documents. Team members and department staff have found this assistance extremely valuable.
- The writing team meets regularly to build consensus about the direction of and the major components comprised in its draft framework. This phase may continue from six months to two years, depending on the degree of consensus that exists within a particular writing group.
- When a draft curriculum framework is completed, the writing team submits it to the state superintendent, who forwards it to the South Carolina Curriculum Review Panel. This panel is responsible for overseeing a field review, making revisions, and recommending adoption of the curriculum framework to the state board of education.

The Curriculum Review Panel consists of eleven members appointed by the state board of education. Candidates for the Curriculum Review Panel must have taught, lectured, written, or practiced in one of the academic areas slated for a curriculum framework or in a related education field. At least three members must be full-time classroom teachers, and all members must submit a statement declaring that they have no association with curriculum material providers or maintain no other conflicts of interest. Curriculum Review Panel members may not be current members of a curriculum framework writing team or employees of the South Carolina Department of Education.

- Upon receiving a draft curriculum framework, the Curriculum Review Panel appoints a five-member subcommittee to conduct a framework field review. The subcommittee must allow at least sixty days for public comment, with all comments required to be submitted in writing. Based on the public input, the subcommittee revises the field review draft in collaboration with members of the framework writing team. The subcommittee consists of at least two panel members and other specialists in the curriculum area under review; no state department employee or person with a commercial interest in particular curriculum materials may serve on this subcommittee. The subcommittee sends the draft framework to district superintendents, principals, teachers, parents, students, business leaders, civic groups, colleges and universities, and individuals who request copies. Principals are asked to facilitate a school-level review of each framework with teachers and parents and to summarize their input.
- The Curriculum Review Panel recommends the revised curriculum framework to the state board of education for approval. A framework is considered final when the board votes to adopt it.

A System of Checks and Balances

States working to establish academic content standards face a variety of questions, including the following. To what extent should the standards conform to popular, democratically determined notions of what schools should teach? To what extent should the standards be "out in front"—leading and shaping school practices according to the judgments of a small cadre of highly experienced and knowledgeable educators? South Carolina's process for developing curriculum frameworks, in which a writing team crafts the original draft and an entirely different body, the Curriculum Review Panel, revises it, is aimed at striking a balance between these sometimes conflicting approaches.

Department aide Dennis Bartels explained that in preparing the draft curriculum frameworks, the writing teams are expected to disregard concern about public opinion. Instead, their mission as professional educators is to produce a document that reflects their best thinking on the ideal instructional experience for all children. In drafting the first three frameworks, Bartels said that it "was clearly the charge of the writing teams not to compromise what they thought was best for children, but to go all the way out to the edge. The frameworks are not supposed to go over the edge or lead so much that no one is following, but it was not the job of the writing teams to determine where that line was. They were really supposed to put down their best vision."

Responsibility for gauging public opinion and assessing public reaction to the documents was left to the Curriculum Review Panel. The panel essentially determined whether and in what particular areas the writing teams had gone too far. "We asked the writing teams to push it as far as they could and let the people of South Carolina say where they felt uncomfortable, where they weren't ready to go yet," said Andrea Keim, an education associate in the department.

The Public Has Its Say

Approximately 40,000 copies of the first three frameworks—in math, foreign languages, and visual/performing arts—were distributed to the public in September 1993 for review. The Curriculum Review Panel received a total of 3,200 written responses to the drafts.

To ensure accuracy, department staff entered each comment into a computer, and staff members issued a summary of the responses to the Curriculum Review Panel subcommittees. Each subcommittee then "spent lots of time in a hotel room" incorporating the public's response into the draft frameworks, explained Keim. She emphasized that the subcommittees had strict instructions to make only those improvements called for in the written comments. "Their job was to listen to what was said in the responses and to make changes based on that—not to make changes that they personally would like to see." Keim added that refraining from additional changes was often difficult for subcommittee members at times, "but they kept themselves in check pretty well."

Within each subject area, comments "clustered beautifully around four, five, or six big questions," said Bartels. Criticism of the frameworks tended to fall into two categories: opposition to a particular aspect of a framework, or opposition to a specific educational issue. When public opinion reflected opposition to a particular part of a curriculum framework, the review panel either rewrote or deleted the passage in question. "That strong public reaction would be interpreted as a case in which the writing team went over the edge. When there was that much disagreement with the writing team, the panel always accommodated the public's view," noted Bartels.

When public opinion reflected disagreement about a specific educational issue, however, the review panel typically decided to place the issue "on hold" until the framework is revised again. For example, citizens who commented on the mathematics framework were strongly divided over the notion of grouping students according to ability. Bartels noted that while

some responders were supportive of ability tracking, others believed it was "absolutely the most irresponsible thing we could do." He added, "With the issue of ability grouping in math, the panel concluded that we still don't have enough information to make a decision. It is not clear from practitioners in the field and it is not clear from empirical research whether this is a good idea or not. It is an issue that we will look at closely over the next several years," explained Bartels.

After carefully reviewing the written responses, each subcommittee compiled a brief status report that outlined reviewers' key concerns and listed the subcommittee's preliminary recommendations. For example, the math subcommittee reviewed 1,511 written responses—68 percent from teachers, 10 percent from parents, and 5 percent each from students, administrators, and business and community representatives. Seven percent either were from individuals or were not classified. The math status report noted, among other things, that "respondents indicated a need for more guidance on the role of computation and fundamental arithmetic algorithms in the early grades." In a preliminary recommendation, the subcommittee suggested that the mathematics framework "be revised to reflect the place of the arithmetic operations in learning mathematics."

Copies of these status reports were circulated widely, to let reviewers and other interested parties know that the Curriculum Review Panel had read and listened to the public's comments. Department staff explained that this step proved to be critical because it served to calm anxieties about the curriculum framework development effort and to reassure citizens that their input was being taken seriously. "The status reports were a way of saying, 'We hear you, and this is what we hear; and we are going to make changes based on what we have heard.' I think that really settled a lot of people's concerns," said Keim.

Other Feedback

During the field review period, the Curriculum Review Panel also solicited a nationally recognized expert in each framework discipline to critique the drafts. A department staff member noted that the comments submitted by these outside consultants were never permitted to override the views of the hundreds of South Carolina teachers, parents, and community members who commented on the drafts.

"Our word to the Curriculum Review Panel was that [the curriculum frameworks] were intended to be South Carolina's documents, and that any comments offered by the outside consultants needed to be considered in the context of what South Carolina educators were saying," said the aide. "In other words, the national consultant does not steer and change the direction of a framework that everybody in the state says they like. That is not their role. Their role is to tell us what they would add, what they would delete, and what they didn't understand—not to start a whole new chapter in the discussion. The review subcommittees then used those comments in conjunction with all the other comments."

Public Input Sessions

In a second stage of the public review process for the first three frameworks, the Curriculum Review Panel conducted a series of public input sessions to give citizens a final opportunity to express their opinions. Six such sessions were held for each framework at locations throughout the state. However, very few people—no more than 100 in total—attended the eighteen input sessions. One department staff member theorized that after reading the Curriculum Review Panel status reports, the public felt that most of its concerns with the initial draft frameworks already had been addressed. Given the poor turnout, department officials elected not to hold public input sessions for the English language arts or science frameworks and do not intend to hold any for the remaining three curriculum frameworks. According to Andrea Keim, public input sessions sponsored by the department were not necessary after local officials and community organizations got more involved in the effort. In fact, state officials believed

that local groups would be more effective in soliciting public feedback.

With few new comments to respond to as a result of the public input sessions, the subcommittees assigned to revise the first three frameworks completed their work quickly. The revised frameworks were recommended for adoption in October 1993 by State Superintendent for Education Barbara Nielsen, and they were formally adopted by the state board of education the following month.

English Language Arts

The next framework to be finalized was in English language arts. A draft of the framework underwent public review from February to April 1995.

To solicit feedback, the department mailed 11,000 copies of the draft framework to schools, colleges and universities, professional and parent organizations, student organizations, and chambers of commerce. The framework included a one-page response form asking four questions.

- Does this framework fit with your expectations of what all students should know and be able to do in English language arts?
- What do you like in this document?
- What would you add or change in this document?
- Do you have any other comments on this framework?

Responders also were asked to identify whether they were a superintendent, principal, teacher, parent, student, community/business representative, or "other." The introduction to the response form read, "Your responses are very important and will be considered equally and carefully when making decisions concerning revisions that will be made to the document."

By May 1, 1995, the department had received almost 500 written responses to the draft English language arts framework, the overwhelming majority of which were strongly favorable, according to department staff. "I think we have only gotten ten responses that said 'No, we don't like the framework,'" said the department's Andrea Keim. Moreover, the responses to the English language arts framework had a different tone than those received in response to the first three frameworks. "There is less confusion now. It may be because educators understand what the framework effort is all about. They are familiar with the whole concept," she said. Following revisions by the Curriculum Review Panel and approval by the state board of education, the final curriculum framework was sent to every teacher in the state.

Sample Standard

The Curriculum Review Panel hoped that teachers, parents, and administrators who read the South Carolina mathematics framework would detect a "friendly" tone throughout the document. Although it deals with the "serious stuff" of mathematics and promotes a new approach to teaching, the document was intended to offer teachers encouragement and to instill in them a sense of optimism. The framework was not intended to "brow beat" teachers for previous faults. According to Kay Creamer, chair of the Curriculum Review Panel and an eighth-grade math teacher, the educators who worked on the document worked hard to give it a positive tone.

"Tone is very important," she said. "It has to be friendly and upbeat. It has to say, 'This is what we want to do,' not, 'All things are bad and we've done things wrong and now we want to do this.' Because if you set the tone that things have been so bad, people don't even want to read on." She added, "The document had a rather sullen overtone when it was first written. It is much more friendly now."

The South Carolina mathematics framework includes standards specifying what students should learn in kindergarten through grade twelve, as well as sample activities and problems that teachers can use in the classroom. Figure 10 lists the six content "strands" covered by the framework. Figure 11 excerpts the complete text of the measurement strand for grades six through nine.

Figure 10
South Carolina's Elementary and Secondary School Mathematics Curriculum*

Content strands for grades kindergarten through three, three through six, six through nine, and nine through twelve:

- number and numeration systems
- numerical and algebraic concepts and operations
- patterns, relationships, and functions
- geometry and spatial sense
- measurement
- probability and statistics

Example: Measurement (Grades Three Through Six)

> In grades three through six, measurement is of central importance to the curriculum, because of its power to help students see that mathematics is useful in everyday life and to help them develop many mathematical concepts and skills (National Council of Teachers of Mathematics, *Curriculum and Evaluation Standards for School Mathematics*, 1989, p. 51).

Students decide the most appropriate tool for a particular task and determine the most useful way to measure an object. As students acquire the ability to use appropriate measuring tools in the classroom, they should extend these skills to applications such as architecture, art, science, commercial design, sports, cooking, and map reading. Students' abilities to use estimation strategies develop naturally through their experiences in measuring the world around them.

Students will participate in problemsolving activities through group and individual investigations so that they can:

- understand the concepts and attributes of length, capacity, weight (mass), perimeter, area, volume, time, temperature, and angle measure;
- understand the structure and use of nonstandard and standards (customary [English] and metric) systems of measurement;
- estimate, construct, and use measurement for description and comparison;
- select and use appropriate tools and units to measure to the degree of accuracy required in a particular situation;
- use concrete and graphic models to discover formulas for finding perimeter and area of common two-dimensional shapes;
- use measurements and formulas to solve real-world and mathematical problems; and
- connect measurement to other aspects of mathematics and to other disciplines.

Activity
GETTING THE FACTS

Literature: Clement, Rod. *Counting on Frank*. Milwaukee, Wis.: Gareth Stevens Children's Books, 1991. (The narrator of this book likes to collect facts with the help of his dog Frank. Each two-page spread of the book includes a different fact involving such mathematical topics as counting, size comparison, or ratio.)

Objective: Students solve problems involving estimation of volume.

Directions: Read the entire story aloud. Tell students that they will need to know the size of the average humpback whale and to discuss where this information can be found. Divide the class into small, cooperative groups, giving each group a worksheet to complete. Because the data the students have collected will probably include the whale's length and width, they will have to make inferences about the dimensions of a box for the whale. They should justify these dimensions. They should also describe the processes they used to find their answers to the questions on the worksheet.

One of the facts shared in the book *Counting on Frank* is that only the humpback whale would fit in the narrator's house. Let's find out the size of his house.

Figure 10 (continued)

Getting the Facts

How big is the average humpback whale? _____

Using the Facts

If you place one whale inside a box, about how big would the box need to be?

Length _____
Width _____
Height _____

Describe how you determined the box dimensions. _____

_____

_____

About how much space would ten boxes fill? _____

About how big is the boy's house? _____

About how many humpback whales would fit in your school? _____

Write down how you arrived at your answer. _____

_____

_____

_____

(Reprinted with permission from Hopkins, *Arithmetic Teacher*, 1993, pp. 513-517.)

* Taken from the South Carolina Mathematics Framework, November 1993, pp. 59-61.

Dollars and Cents

Funding for the development of South Carolina's curriculum frameworks originally came from the state department of education's regular operating budget. "We believe that curriculum revision is part of the department's charge, so we did not get a new allocation of money from the legislature to do this," said the department's Pamela Pritchett.

Since the effort began in 1991, there have been, on average, three writing teams working at one time, with each team's expenses amounting to about $30,000 per year. These expenses included team travel and lodging, resource materials, consultants, pay for substitute teachers, and a professional writer for each team. Costs associated with providing staff support from within the department of education, however, are not included in this figure. The costs of printing the frameworks, which could be expensive, also are additional. For example, the printing costs for 11,000 copies of the English language arts draft framework amounted to $25,000.

The Curriculum Congress secured $100,000 in funding during its first year. This funding came from the Commission on Higher Education, the Rockefeller Foundation, and the South Carolina Department of Education. After the first year, the congress' funding level was set at $50,000 per year and has been phased out gradually. In 1996 the Curriculum Congress had no budget.

Figure 11
Strand: Measurement (Grades 6-9)*

In grades six through nine, measurement activities focus on the transition from concrete to abstract mathematics. Such activities should be related to active exploration of the real world with careful selection and use of appropriate tools in measuring objects. However, students' ability to use these tools should be extended so that they can apply these skills to new situations. As students move through grades six through nine, there will be a shift in focus on using concepts and skills as students learn more efficient procedures and, ultimately, formulas for finding measurements.

Students will participate in problemsolving activities through group and individual investigations so that they can:

- extend their understanding of the concepts and processes of length, capacity, weight (mass), perimeter, area, volume, time, temperature, and angle measure;
- estimate, construct, and use measurements to describe and compare phenomena;
- use suitable methods of approximations to find areas and volumes of irregular shapes;
- understand the structure and use of nonstandard and standard (customary and metric) systems of measurement;
- select and use appropriate tools and units to measure to the degree of accuracy required in a particular situation;
- develop the concepts of rates and other derived and indirect measurements;
- use concrete and graphic models to discover formulas for finding perimeter, area, and volume of common two- and three-dimensional shapes;
- use measurements and formulas to solve real-world and mathematical problems; and
- connect measurement to other aspects of mathematics and to other disciplines.

Activity
CANINE CARPENTRY

This activity makes practical use of students' measurement skills and provides practice in working in two and three dimensions.

Give students a piece of plywood measuring 150 cm x 300 cm. Tell them that them must construct a dog house from this piece of wood. They should try to make the house as large as possible (by volume) from the available materials.

Students can begin by making a scale drawing to show how the parts of the dog house will be cut from the plywood and recording the measurements on the scale drawing. Students can draw sketches to show what the finished kennel will look like and record the measurements on these sketches. Encourage students to investigate how many different kinds of shapes of dog houses can be made.

This activity can be extended by actually constructing the "winning" dog house (largest interior volume) in the classroom or in a practical arts class. Have students volunteer to contact local builders to donate the plywood.

(Adapted with permission from National Council of Teachers of Mathematics, *Curriculum and Evaluation Standards for School Mathematics*, 1989, p. 118.)

* Taken from the South Carolina Mathematics Framework, November 1993, pp. 73-74.

Conclusion

Creating state standards for public education is fundamentally about developing a broad, public consensus on what students should know and be able to do when they complete high school. In the past, education standards were limited to health, safety, access, and procedural issues. The closest thing to academic standards produced by states were curriculum frameworks that provided a basis for what should be taught at each grade level. The fundamental difference between past attempts to regulate education and the current focus on academic standards is the emphasis on student learning. Academic standards challenge schools to do whatever is necessary to help and encourage students to meet specific learning standards.

The four case studies presented in this report provide a clear picture of the process that states must undergo to create a broad-based consensus on student learning. Although all of the states engineered a unique process adapted to their own educational and political contexts, key components were present in each state's activities.

Leadership

Efforts to develop public consensus for changes in institutional norms and procedures require strong, visible leadership. Standard-setting initiatives are no different. The initial leadership for setting high standards can come from a person, such as the Governor or the superintendent of public instruction, or from a group, such as the business community. Whatever the source of this leadership, those involved involved in promoting standards must be skilled in facilitating public dialogue and effective in easing public concerns and fears.

Public Engagement

The standards development process should be structured in a way that encourages public input and uses citizen feedback to generate broad consensus on what students should know and be able to do when they complete their education. The four case-study states all reached out to the public in new ways and provided multiple opportunities for people to comment on the standards before they were presented for final acceptance. Community-based public forums; advertisements in newspapers and on radio and television; special programs on setting academic standards; letter-writing campaigns; and newspaper inserts were among the strategies these states used to help them engage the public in their standards debates. States that do not make genuine attempts to solicit public feedback about proposed standards and modify their frameworks to address identified concerns will undermine the viability of their standards.

Phased Development

To develop and implement academic standards successfully, it is necessary to win broad public and strong bipartisan support for them. This kind of support is more likely to be engendered if states initially focus their efforts on the development of standards in the core

academic subject areas around which there is greater consensus on what students should know and be able to do. The lessons learned during the development and implementation of these standards will make the creation of standards in additional subject areas easier and help prevent controversy surrounding the standards for some subjects from adversely affecting the development of standards in other subjects.

These case studies identify some of the guidelines, lessons learned, and models that states and local communities involved in the development of standards can use to help them clarify what they want their students to know and be able to do. They highlight the need for states, districts, and schools to develop new ways of ensuring that students have the knowledge and skills they need to be productive citizens. Standards alone, however, cannot generate desired improvements in student learning. They represent only one part of each state's comprehensive strategy to reorganize elements within their public school systems to educate students more effectively. To ensure that students learn more, states must coordinate their efforts to establish standards with their other school improvement initiatives and ensure that they are all focused on improving schools and increasing student learning.